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This study had three objectives: (1) to clarify the conceptual basis of award fee contracting methods; (2) to describe empirically their application in Air Force Systems Command (AFSC) programs; and (3) to identify lessons which could be learned about the award fee method from these applications. From previous research and existing literature, a "theory" of the award fee approach to acquisition was formulated which presents it as a distinctive management tool for planning and controlling performance in contracted

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USE OF THE AWARD FEE IN AIR FORCE
SYSTEM AND SUBSYSTEM ACQUISITION

by

Raymond G. Hunt, Ph.D.

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USE OF THE AWARD FEE IN AIR FORCE
SYSTEM AND SUBSYSTEM ACQUISITION

Final Report

to

Air Force Business Management Research Center
Wright-Patterson AFB, OH. 45433
(Contract no. F33615-78-C-5230)

by

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School of Management
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ABSTRACT

Conducted under auspices of the Air Force Business Research Management Center at Wright-Patterson Air Force Base, this study had three objectives: (1) to clarify the conceptual basis of award fee contracting methods; (2) to describe empirically their application in Air Force Systems Command (AFSC) programs; and (3) to identify lessons which could be learned about the award fee method from these applications. From previous research and existing literature, a "theory" of the award fee approach to acquisition was formulated which presents it as a distinctive management tool for planning and controlling performance in contracted system acquisition. Fifteen applications of the award fee contracting method in the AFSC were selected as cases from which to derive empirical descriptions of patterns of award fee application. These were analyzed for their consistency with award fee theory. Interviews with government and contractor personnel explored their experiences with the award fee and their judgments about it. Thus, an "input evaluation" of the award fee approach to acquisition was accomplished to provide a basis for identifying policy and technical recommendations for its more effective future use, and for identifying award fee-related research needs.

USE OF THE AWARD FEE IN AIR FORCE SYSTEM AND SUBSYSTEM ACQUISITION

Raymond G. Hunt
State University of New York at Buffalo

Executive Summary

Award fee contracting is a management tool which uses subjective evaluation of performance as a basis for determining contractor compensation. Conducted under auspices of the Air Force Business Research Management Center at Wright-Patterson Air Force Base, this study had three objectives: (1) to clarify the conceptual basis of award fee contracting methods; (2) to describe empirically their application in Air Force Systems Command (AFSC) programs; and (3) to identify lessons which could be learned about the award fee method from these applications.

A "theory" of the award fee approach to acquisition was formulated which presents it as a distinctive management tool for planning and controlling performance in contracted system acquisition. Fifteen applications of the award fee contracting method in the AFSC were then selected as cases from which to derive empirical descriptions of award fee application for analysis as to their consistency with award fee theory. Interviews with government and contractor personnel explored their experiences with the award fee and their judgments about it. Thus, an "input evaluation" of the award fee approach to acquisition was accomplished to provide a basis for identifying policy and technical recommendations for its more effective future use, and for identifying award fee-related research needs.

Award Fee Theory

In this monograph award fee is conceived as a strategy for implementing a "joint management" (J-type) model of program management and system acquisition. Compared with older paradigms, this model affords a superior view of the nature and conditions of modern system acquisition in the American social economy. It is, furthermore, a general model which rests comfortably with such federal acquisition doctrine as OMB Circular A-76, and is capable of accommodating as special cases most if not all acquisition techniques (e.g. fixed price contracting and objective evaluation of performance) that have proven empirically useful.

What is the Award Fee method of acquisition? As defined by the ASPR/DAR (3-405.5; Cost-Plus-Award-Fee [CPAF] Contract), the award fee is a method of paying profit (fee) to a contractor (seller) based on unilateral judgments by the government (buyer) about the contractor's performance. The essential features of the award fee approach to contracting are four:

- (1) a fixed or base fee
- (2) a variable or award fee
- (3) after-the-fact judgmental evaluation of contractor performance
- (4) evaluation-based payment of award fee.

Why is Award Fee used in system acquisition? Whenever substantial uncertainty exists in a performance environment (e.g. R&D) where the government satisfies its acquisition needs by contracting with private firms, a method

of management is needed which is adaptable to this uncertainty, helpful in reducing it, and, explicitly recognizes the government's need to participate actively in that process. The award fee approach to acquisition helps the government deal with these management imperatives in ten ways which are hallmarks of award fee acquisition strategy. Thus, award fee:

- (1) encourages government-contractor cooperation,
- (2) assures an active role for government managers,
- (3) recognizes limitations on top management ability to control operations,
- (4) stimulates formal and informal communication,
- (5) recognizes variability of motivations,
- (6) leaves to contractors the task of motivating their own personnel,
- (7) views the acquisition process as dynamic,
- (8) is flexible and provides room for human judgment,
- (9) simplifies contractual provisions, and
- (10) helps assure that profits are earned.

Mixed-sector system acquisition under uncertainty, with its cooperative requisites, cannot be conducted in an ordinary arms-length manner, as if between buyers and sellers in classic free markets. Under these conditions acquisition must be collaborative (J-type), but closely attentive to the public interest. The government must participate in the acquisition process as well as in its input and output.

Achievement of this J-model goal is facilitated in the award fee approach by its shared-management requirements, and by avoiding the interposition of contractual or other barriers between government and contractor managers, and between government managers and their management tasks. Unlike traditional incentive contracts, the award fee approach establishes an inter-organizational framework for the active exercise of managerial judgment by both contractor and government personnel. It is a managerialist rather than a contractualist approach to acquisition. It casts the contract in the role of servant to managerial ends instead of the other way around. It is important, therefore, to avoid, as the award fee does, rigid, mechanical, predetermined contractual formulae for fee and other decisions, in favor of flexibility and active human management.

Simplicity is another major point in favor of the award fee strategy. But, from the standpoint of management, award fee contracts are demanding to administer. This argues for extra care in assuring their structural simplicity, and it also argues that award fee should be used only when the potential benefit to the government is clear and when the size or importance of a project/program is worth it.

Finally, if it is desirable that contractors receive profits, so is it desirable that those profits be earned. Because it relies on ex post performance-based fee determinations instead of cost-based fee setting or fixed fee in advance of performance, award fee contracting comes closer than most other methods to fulfilling the principle that profit should be earned, not awarded in advance.

When is Award Fee used? The award fee method of acquisition is intended for use in any acquisition environment where both of two conditions are met: (1) when uncertainties exist which preclude rigorous specification

of contract performance parameters or price, thereby introducing significant program management problems; and (2) when the magnitude of the contracted work or the potential benefit to the government is sufficient to justify the administrative costs of the award fee procedure.

Costs of award fee administration suggest, however, that award fee not be used when any of the following conditions exist:

(1) the government can confidently rely on the marketplace to protect its interests (as in genuine price competitive procurement, or standard off-the-shelf buys), and can express its confidence in a fixed price contract to which change is unlikely; or

(2) the government can itself effectively reduce uncertainties of cost, performance, etc. to trivial proportions and, again, resort to fixed price contracts; or

(3) the planning and administrative costs of award fee procedures exceed any potential benefits from their use, or are infeasible for technical reasons. If the work is R&D or support services, resort may be had to cost-plus-fixed-fee (CPFF) contracts; if the award fee was primarily a special-purpose add-on, perhaps to a production contract, a uniform fixed fee contract may be best.

How is Award Fee used? Application of the award fee concept requires three things:

(1) Specification of performance factors, which may be virtually any aspect of contractor performance and management, providing only that it be measurable and substantially under the contractor's control.

(2) Specification of procedures for evaluating contractor performance on target factors, which requires one to: i. specify the criteria which will be used to evaluate each factor; ii. specify a means of operationalizing the evaluation criteria to detect variations in contractor performance on targeted factors; iii. specify a means of gathering (reporting) information on the evaluation measures; and iv. specify where, when, and by whom it is to be evaluated.

(3) Specification of a means of determining fee, which requires: i. a procedure for aggregating factor evaluations to yield an overall evaluation which can be a basis for final fee determination; ii. a method of calculating dollar fee equivalents of the performance evaluations, and identification of the parties responsible for such calculations and fee awards; and iii. specification of time periods and any conditions of fee award.

Planning Award Fee Applications. Solutions to the above-stated requirements are incorporated into an Evaluation Plan, which describes the performance factors and the method of their evaluation, and a Fee Payment Plan, which describes how, based on the evaluations produced under the Evaluation Plan, fees will be paid to the contractor. The Evaluation Plan also serves a broader program control function, stimulating and structuring a steady flow of information across organizational boundaries. This control function of the Evaluation Plan provides the award fee method its greatest potential value, namely its utility as a management tool.

Who is involved in Award Fee administration? Administration of an award fee contract involves at least three levels of government managers, viz.:

- Level I -- a fee determining official (FDO)
- Level II -- an award fee review board (and chair)
- Level III -- performance monitors

Case Studies of Award Fee Applications in the U.S. Air Force Systems Command

The specific objectives of this project phase were to:

- (1) describe a modal pattern of award fee application in the AFSC;
- (2) offer a commentary on this scenario; and
- (3) describe reactions to award fee contracting among a group of experienced program-level contractor representatives.

The award fee scenario was developed from case studies of 15 award fee contracts on 11 AFSC programs, selected from an inventory of roughly 27 current and recently-completed contracts on some 17 different AFSC programs.

An AFSC Award Fee Scenario. Award fee applications in the AFSC generally stay within traditional bounds. They stress contractor compensation more than program management, and mostly view award fee simply as an alternative contract-type, intermediate between CPIF and CPFF.

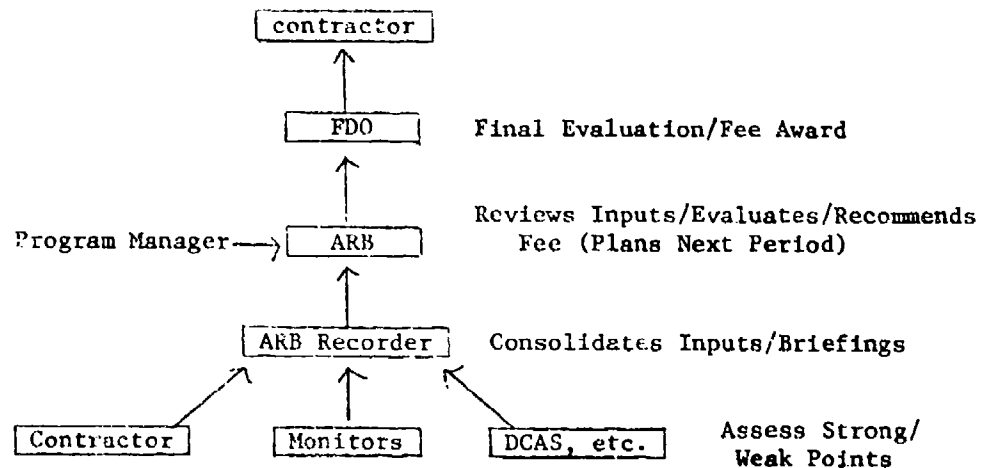
Evaluation plans for AFSC award fee applications are variable but commonly identify two or three levels of performance factors on which to base contractor evaluation. Factors normally are weighted for importance and orient to output rather than input (or process). Concern about subjectivity in award fee evaluation regularly stimulates attempts at "objectification" of evaluation standards and procedures.

AFSC policy seeks to establish award fee organization "at the lowest practical level." Typically an officer below the Commander of the Air Force buying Division will act as Fee Determining Official (FDO). Award Review Boards (ARB) commonly are chaired by a Deputy within the AFSC field division or by a SPO Director, Program Manager, or other comparable officer, depending on circumstances. Some tendency to standardize award fee organization exists, but variability continues.

The ARB is managerially the most important unit of the AFSC award fee organization. It plans, conducts, and manages contractor performance evaluations, and recommends fee awards to the FDO. An ARB ordinarily makes use of project officers as monitors and evaluators of task-level contractor performance, and a "recorder" to coordinate and document these processes.

The government Program Manager (PM) may be, but often is not, a literal member of the award fee organization. In any case, he or she plays a principal role in award fee planning, evaluation, and fee determination, as well as in overall program control. He or she normally selects, assigns, and supervises monitors, and the PM's briefings and recommendations usually are decisive in the outcomes of deliberations by the ARB and FDO.

A typical award fee evaluation can be diagrammed as follows:



Contractor input to the ARB/FDO may be via direct formal self-evaluation and/or briefing, or indirect, via the PM.

Grading systems for contractor performance evaluation vary throughout the AFSC. Mostly they involve adjective ratings with correlated percentage scores (and color codes). The correspondence of adjectives and percentage scores is often only approximate across AFSC organizations, however, so that the meaning of "grades" is variable.

Fee awards have been variable in AFSC programs, ranging from 0-100%, (usually additive to a two or three percent base fee). AFSC policy emphasizes payment of fee only for superior performance, but policy is not always followed. Policy also counsels against carrying unearned fee over for possible award in later periods; and it encourages allocating larger fractions of the award fee pool to later rather than earlier periods.

Commentary on AFSC Award Fee Contracting. The preceeding scenario suggests several matters deserving of policy review and research.

(1) Award fee evaluation, grading norms and practices in the AFSC are complicated, hard to understand, and excessively variable. They need to be simplified, clarified, and made to show more commonality, especially within program offices.

(2) Alternative methods of providing contractor input to award fee planning and evaluation warrant review and probably empirical evaluation.

(3) The effects on award fee processes of different organization levels needs study to provide better guidance consistent with aspirations for decentralized decision-making and policy-level program oversight.

(4) It rarely is possible for contractors to earn maximum award fee. All aspects of this issue need careful review. Consideration should be given to: a. relaxing prohibitions (where they exist) against carrying

unearned fee forward to later evaluation periods; and b. employing a model for fee pay-out that would align it with the utilities of contractor performance change for the government.

(5) Policies on allocating portions of the award fee pool by period need review in order to encourage greater discretion and tailoring of allocation plans to particular acquisitions.

(6) There is uncertainty about award fee objectives and Air Force policy regarding them. This warrants review and clarification.

(7) To encourage imaginative application of award fee strategies to new acquisition problems guidance on award fee concepts is needed more than on procedures.

Award fee contracting needs to remedy three major general defects and confront certain choices. First, award fee evaluation plans too often are overelaborate. Even their users frequently cannot understand them.

Second, award fee planning and administration typically suffer from "objectivist" biases which subvert the intended role of the award fee as a means of effecting subjective evaluations of contractor performance, and may damp the communication essential to clarify necessarily ambiguous work statements and allow government managers to control the programs for which they are responsible.

A third major problem is bureaucratization. The main danger from standardization is in the ways it inhibits flexibility and discretion in environments (like R&D) where flexibility and discretion are essential to effective management.

There is need to orient (or re-orient) award fee contracting policy to the basic trinity: simplicity, subjectivity, and flexibility. Training probably would be the best way of doing this. Further development of award fee contracting manuals probably would be the worst way of doing it. The training which is needed is not in the procedural details of the award fee but in basic concepts, strategic objectives, and especially the facilitative functions of award fee for program management.

Most of the real problems of award fee practice come to rest at the program level. They translate there to management strategies and tactics. A capability for sophisticated program management is decisive for effective system acquisition. This, however, implies the fundamental precondition of managerialist rather than contractualist acquisition strategies, an orientation to which the government is not yet clearly committed. Whether or not to accept a joint government-contractor management model of system acquisition as valid in the United States and to follow its methodological implications--via award fee techniques and otherwise--is, then, a most critical choice.

Contractor Responses to Award Fee. In-depth interviews with a small sample of experienced AFSC contractor personnel on the effects of award fee methods of system acquisition produced tentative answers to a number of procedural and evaluative questions. Apparently the fundamental effect of the award fee on contractor organization and/or personnel is induction of a highly responsive attitude--responsive, that is, to direction from the government program office.

Award fee evaluations appear to serve as report cards against which higher contractor management gauges both program and managerial performance; and, award fee provisions often give contractor program managers extra leverage with their own management and increased ability to command corporate resources.

Provisions for passing the award fee through the contractor organization are highly variable. Mostly they seem either not to exist at all or else to be inexplicit relative to award fee. Some firms give parties and nominal awards to selected high performing individuals, but literal monetary bonuses seem to be atypical, even for the PM.

Most contractors consider the award fee to impose special administrative burdens. Mostly they speak in terms of added "paperwork," but they also believe award fee imposes emotional burdens in the form of "evaluation anxiety," even inducing a kind of "award fee paranoia."

Contractors seem to feel well-informed on the essentials of the award fee plans under which they work. Briefings, memoranda, opportunities to comment on proposed evaluation factors, and various informal communications apparently make contractors comfortable on this count.

Most contractors, if they wish, can make some form of self-evaluative input to ARB/FDO deliberations. The form and degree of detail of this input is variable, as is the confidence with which contractors believe the Air Force wants it or takes it seriously.

Almost universally contractor informants described the award fee as a "potent motivator." One PM stated the matter succinctly when he said that "the award fee is a strong motivator simply because it concentrates on management."

How Do Contractors View Current DOD Acquisition Policy? As contractors see the nub of the problem it is this: "the Air Force wants fixed price, but [General Slay to the contrary notwithstanding] wants to do business as usual." A more realistic policy, one contractor suggested, would recognize that "there may be an important place for larger award fee contracts (CPAF specifically) as a powerful tool for controlling the contractor directly, instead of trying to do it indirectly by establishing a fixed price environment by decree."

Life-cycle costing also came in for cynical commentary. The consensus view was that "the guy with the low price going in is going to win, whatever the government says about life-cycle costs and their importance." There was also a belief that the government is seeking incompatible goals in that design-to-cost concepts and emphases on competition tend to "cancel one another out."

Skepticism was prominent, too, about AFSC interest in fostering more orderly planning of the acquisition process. Delays in government actions and turnover of personnel both are seen to defeat such planning, which already must cope with much technical uncertainty.

An important side-effect of government turnover is that in any multi-year military acquisition the contractor tends to be the constant element. It is contractor people who brief and socialize new Air Force personnel,

thereby heavily influencing their conceptions of program objectives and circumstances.

Lessons Learned

The findings of this study suggest quite strongly that the award fee is an impactful technique which works essentially as theory forecasts. It augments the influence of the government office, especially its manager, by encouraging contractor responsiveness to direction. Hence, there is a clear need to guarantee the ability of the government program manager to use effectively the latitude for program control given him by award fee structures.

By way of summary, it seems justified to recommend increased use of award fee contracting. Several recommendations for research and policy should be followed, however,

- award fee evaluation and grading procedures ought to be reviewed and guidance for them improved;
- alternative methods of providing for contractor participation in award fee planning and evaluation should be considered;
- consideration needs to be given to clarifying the policy issues at stake in choices of different award fee organization levels;
- means of making it feasible for contractors to earn all the award fee should be sought, including the device of carrying unearned fee forward to later periods; and
- rules for allocating fee to periods and to levels of performance need to be evaluated.

In addition, more care must be taken to ensure that award fee applications satisfy the three fundamental conditions of

- simplicity,
- subjectivity, and
- flexibility.

To these ends

- more and better training for program personnel on the philosophy and objectives of award fee approaches to program management should be instituted, and
- Air Force policy should be clarified as it relates to use of award fee methodologies.

Meanwhile, research should

- shift from focusing on the award fee as a contract type to a focus on it as a decision tool for management; and this research might best

-concentrate on studies of the decision-making that links acquisition policy with application at program levels.

Certain of these recommendations have implications for the ASPR/DAR. For example:

- (1) the AFSC DAR Supplement 3-405.5(d)(2) might need to be reworded in a fashion less discouraging of provisions for rolling-over unearned fee;
- (2) similarly, section (e)(4) might be revised to provide discretion for contractor input to award fee planning;
- (3) section (e)(5) could perhaps be modified to encourage tailoring award fee plans and, at the same time, enlarged to provide more guidance on standards for award fee grading systems;
- (4) section (e)(8)(i) could include in its discussion of "Criteria" guidance on defining the threshold standard of acceptable performance; and
- (5) the AFSC Supplement might be otherwise modified to reflect a heavier emphasis on award fee as a management tool.

To clarify the impact of award fee on system acquisition, further research should be undertaken to:

- (1) obtain better information on possible adaptations to award fee at corporate levels of contractor organizations;
- (2) compare award fee impacts on smaller and larger contractors; and
- (3) compare effects of the award fee in different applications, and, to the extent possible, with different contract forms for the same purposes (e.g. CPAF vs. CPFF for service contracting).

Also, research should be directed to evaluating the effects on contractor responsiveness of having multiple award fee contracts within a single contractor organization.

It warrants repetition that the award fee seems to work, as theory suggests, via government program offices. Its success depends on those responsible for these offices being willing and able to manage. Partly this is a matter of training, and partly, it is a matter of understanding better how decisions are made and problems solved, and, how award fee affects this. Coupling policy and procedure at program levels is crucial to the fate of acquisition planning. It needs careful study and analysis.

Use of The Award Fee in Air Force System and Subsystem Acquisition

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Acknowledgments

Many individuals in and out of government helped with this study and provided information for it. Their names are too many to recite, of course, and, in any case, to do it would compromise the assurances of confidentiality given to some of them. But, if collectively and anonymously done, I thank them all the same.

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I.

INTRODUCTION

Cost Plus Award Fee (CPAF) contracts are being used in the Air Force and elsewhere to help the government achieve its goals in major system and subsystem acquisitions. Award fee contracting is a management tool which uses subjective evaluation of performance as a basis for determining contractor compensation. It seeks thereby to assist contractor and government managers in their efforts to gain visibility and control over acquisition processes.

Experience with award fee contracting indicates a need for better specification of its theoretical basis and further research on its effects upon acquisition planning and management. Therefore, this project was undertaken to accomplish three main objectives:

- (1) to provide a comprehensive theoretical framework that defines the nature and rationale for award fee approaches to system acquisition, in the Air Force and elsewhere;
- (2) to describe patterns of award fee application, chiefly in the Air Force Systems Command (AFSC); and
- (3) to evaluate these applications in relation to award fee theory (and other considerations), and offer pertinent recommendations for future acquisition research and practice.

Scope and Method of the Project

Developing a Theory for Award Fee Contracting. Several scattered studies have sought to describe or evaluate award fee contracting and certain of its effects (an inventory of research and writing on the award fee is found in the Bibliography appended to this report). Except for a somewhat nebulous appendix to the 1967 NASA CPAF Contracting Guide, however, and some preliminary efforts by me (Hunt, 1971, 1974a), these studies

have been altogether empirical and hard to evaluate in the aggregate. No serious attempt has been made to articulate a solid theoretical foundation for award fee contracting techniques. This project, therefore, set out to state such a "theory" as its first order of business.

By "theory" here I mean not a rigorous formal model, but a consistent conceptual framework which can serve to organize and clarify thinking about the award fee while, at the same time, helping guide its use and assessment. The "theory," then, is essentially two things. First, it is a definition-in-depth of the award fee method of contracting. Second, it is a quite thorough and integrative description of a rationale for using award fee techniques in modern American system acquisition.

Construction of the "theory" (with respect to which I shall henceforward drop the quotation marks) drew upon several sources. Principal among them were: (1) definitions of the award fee in government regulations and similar sources; (2) bodies of relevant social scientific theory and research; (3) analogous bodies of theoretical and empirical literature in the organizational and management sciences; (4) existing literature dealing with award fee (and incentive) contracting and other related procurement issues; and (5) my previous research and experience.

Case Studies of Award Fee Applications in the U.S. Air Force Systems

Command. The specific objectives of this essentially exploratory second project phase were to:

- (1) describe a modal pattern (or scenario) of award fee application in the AFSC;

- (2) offer a commentary on this scenario, which illuminates the choices it represents from among other alternatives and the concepts and perceptions regarding award fee, program management, and system acquisition it suggests are held by AFSC personnel; and

(3) describe reactions to award fee contracting among a group of experienced program-level contractor representatives.

The award fee scenario was developed as a synthesis of a set of quasi-case studies. An inventory of roughly 27 current and recently-completed award fee contracts involving some 17 different programs in the AFSC was provided by AFMCC. From this inventory a total of 15 award fee contracts on 11 AFSC programs was selected for study. Programs and contracts were selected on several non-mutually exclusive criteria, namely,

- (1) to represent contracts for different types of work (e.g. R&D, support services, hardware, etc.);
- (2) to represent contracts for work at different points in the acquisition cycle;
- (3) to represent programs of varying dollar magnitude;
- (4) to represent programs of varying award fee magnitude (both absolute and relative); and
- (5) to represent different contract structures (CPAF, CPIF/AF, etc.).

Obviously the research design did not provide for each of these criteria to be "crossed" with each other. Nor was each contract/program studied in the same detail. Furthermore, because they were of special interest, several Air Force award fee programs not included in the original sample were also studied, either via documents or interviews; and numerous interviews (17) were done with individuals not associated with the specific programs selected as "cases." Some of these were Air Force personnel, some were from other DOD departments, others were from different agencies, and still others were civilians unconnected with contractor firms. (A total of 40 AFSC civilians and military officers was interviewed.) Thus,

"data" collection was designed to be somewhat free form, and-seized opportunities to obtain information as they presented themselves.

The basic case studies which formed the core of the AFSC award fee scenario were generally developed from government sources as follows.

(1) The study was done on a contract-by-contract basis. In general, inquiries of information sources were contract-specific.

(2) The study proceeded from the formal to the informal aspects of the award fee application. That is, it began with an examination of documentary sources describing the acquisition (award fee) plan, then went to similar sources on its implementation and outcomes, and, finally, moved to interviews with actors regarding their activities and attitudes.

(3) Similarly, the study moved sequentially from the government to the contractor. Review of the government side of the acquisition was completed before beginning contractor inquiries. In practice, a view of the contractor organization and its key actors was sought from government contacts. After this, specific procedures for obtaining data from contractors were devised.

(4) The study focused on and was organized around three levels of award fee organization; i. the FPO, ii. the Review Board, and iii. the Working (Program/Performance Monitoring) levels. Thus, different perspectives on the acquisition and the participation of all varieties of its key actors were assured.

(5) Procedurally, as point (2) above implies, the study began with a review of documentary sources and then proceeded to interviews with selected persons. Interviewees included (although not always from all programs):

- i. manager of program;
- ii. contracting officer;
- iii. chairman of award review boards;
- iv. FDOs; and
- v. performance evaluation monitors.

(6) As a matter of practical convenience, contact usually began with the contracting officer, who has access to most of the documentary and other information desired or needed for tactical planning. Data Objectives. The items of information that were sought from documents and interviews are described below.

1. Formal Plans (Planning)

A. General

- 1. Program
- 2. Division
- 3. Program Manager (name, address, phone)
- 4. Contract No.
- 5. Contract Type
- 6. Contract Description (summary of s.o.w.)
- 7. Contracting Officer (name, address, phone)
- 8. Contractor (name, and address)
- 9. Performance Period (and major phases)
- 10. Total Contract Cost (fixed or estimated)
- 11. Total Fee
- 12. Total Award Fee

B. Award Fee Evaluation Plan

- 1. FDO
- 2. Review Board Membership
- 3. Evaluation Periods
- 4. Designated Performance Monitors
- 5. Performance Factors/Weightings
- 6. Evaluation Procedures/Forms
- 7. Documented Changes in Evaluation Plan

C. Award Fee Determination Plan

- 1. Award Fee Allocations by Period
- 2. Procedures for Fee Determination
 - a. By Review Board--inputs/processes/outputs
 - b. By FDO--inputs/processes/outputs
- 3. Documented Changes in Fee Determination Procedures

II. Formal Micro (Processes)

A. Review Board Activity (Records of)

1. Monitor Reports/Briefings
2. Informal Inputs
 - a. Sources/Methods
3. Contract or Mission Statements
 - a. Oral/Written
4. Other Information
 - a. Sources/Methods
5. Reports and Liaison with FDO
6. Liaison with Program Office

B. Working-Level (Performance Monitor) Activity

1. Issuance of Performance Improvement Letters--contents/contractor responses
2. Development of Evaluation "Data Base"--Sources/Methods
3. Methods of Maintaining Within-Period Performance Oversight
 - a. Meetings, Reports, etc.

C. Evaluation/Fee Outcomes

1. Evaluations (by performance factor, by period)
2. Evaluations (overall, by period)
3. Fee Awards (by period)
4. By Period --
 - a. Date of Fee Award by FDO
 - b. Date of Review Board Recommendation to FDO
 - c. Date(s) of Monitor Reports to Review Board
 - d. Date(s) of Monitor Evaluations of Contractor

III. Informal--Micro

A. FDO-Level

1. Informal Contacts with Gov't. Award Fee/Program Organizations--Nature/Frequency/Reasons
2. Informal Contacts re Program/Contract with Other Gov't. Organizations--Nature/Frequency/Reasons
3. Informal Contacts with Contractor Organization--Nature/Frequency/Reasons
4. Problems of Administering Award Fee
5. Means of Managing Such Problems
6. Impacts on Program
7. Contributions of Award Fee to Program
8. Program Features Which Affected Utility of Award Fee in this case

9. Overall Satisfaction with Award Fee (including performance of the components of the award fee organization)
 - a. Re, Program Management
 - b. Re, Compensating Contractor
 - c. Re, Achievement of Gov't. Objectives
10. Perception of Contractor Response to Award Fee Method
11. Satisfaction with and Lessons Learned from this Acquisition
 - a. Re, Award Fee Organization
 - b. Re, Evaluation Methodology
 - c. Re, Contractor Organization
 - d. Re, Other Considerations
12. General Views on Award Fee Concepts/Applications
13. General Views on Acquisition Planning and Management

B. Review Board Level

(Main Sources: Chairman, Program Manager, Contracting Officer)

- 1-3. Same as FDO
4. Procedures for Operating Board--Meetings, Division of Labor, Preparing Reports, Seeking Information--Special Role of Chairman--Assessment of Contractor Performance Improvement Needs
- 5-14. Same as FDO, 4-13

C. Working (Monitor) Level

- 1-3. Same as FDO, but with special reference to methods of structuring contractor interfaces, problem identification, trouble-shooting, and giving feedback on performance to contractor, on day-to-day basis
4. Procedures for Developing Evaluations of Contractor Performance
- 5-14. Same as FDO, 4-13

D. Other

Special purpose information gathered on an ad hoc basis from other informed individuals as and when such was indicated

The comparable work plan for gathering information from contractors follows.

Unlike the procedural plan for the government side, the contractor study began immediately with interviews, during the course of which documentary material was solicited and, if available, examined. In general, the following interviewees were selected:

- (1) the manager of the program to which the contract under study related; and

(2) the individual responsible for administration of that contract.

Contact began with the program manager, which is another variance from the government-oriented plan. This procedure was premised on the belief that the contractor's program manager would be in the best position to provide a comprehensive view of the contractor's organization and operations for the acquisition.

Contractor Data Objectives. Listed below are the kinds of information that was sought from contractor documents and interviews. Information was also sought from the contractor on his familiarity with the government's award fee evaluation and fee determination plans.

Part I--Award Fee Management

A. Planning

1. Program organization--formal
 - a. Government interfaces
 - FDO
 - Program Manager (Award Review Board)
 - Performance Monitors
 - Contracts/Procurement
2. Variations in program organization resulting from award fee

B. Implementation

1. Provisions for evaluation and performance control
2. Award fee-based provisions for "pass-through" remuneration to employees
3. Provisions for award-fee pass-through to sub-contractors
4. Provision for anticipation of award fee in budgeting
5. Participation in the award fee evaluation and fee determination process
 - a. re FDO
 - b. re ARB
 - c. re Monitors
6. Responses to award fee evaluations and fee outcomes
 - a. Performance improvement letters
 - b. Interim briefings
 - c. End-of-period evaluations
 - d. Fee award
 - e. FDO commentaries

Part II--Internal Processes

Data essentially similar to the items listed under Part III, Section A of the government data plan (with appropriate changes of reference from government to contractor) were collected. In addition, the following items of information were sought:

12. General Views on Award Fee Concepts/Applications
 - a. Attitudes toward incentives
 - b. Nature of contractor motivation-organizational and individual
 - c. Extracontractual influences on performance
 - d. Assessments of risk under award fee
13. General Views on Acquisition Planning and Management
 - a. Perceptions of cost vs. performance priorities
 - b. Perceptions of reliability, costs of ownership questions
 - c. Perceptions of Air Force acquisition philosophy
14. General Views on Aerospace Contracting
 - a. Perceptions of public attitudes
 - b. Technology in
 - c. As a marketplace
 - d. Satisfaction with government role
 - e. Motivation for involvement
 - f. Future of

Lessons Learned. The final phase of the project employed the results of its earlier theory-building and case study/critique phases to assess in a preliminary way the current state of the art of award fee contracting in the AFSC, and to formulate proposals for future research and practice.

Organization of the Report

The balance of this report is divided into five chapters, plus an appended bibliography on award fee contracting. Chapter II (The Award Fee Method of System Acquisition) is a conceptual review and description of award fee methodology, which stresses its role as a management tool in the system acquisition process. Chapter III (An Air Force Systems Command Award Fee Scenario) describes an empirical pattern of award fee

application, as indicated by a sample of programs/contracts drawn from within the AFSC. This chapter includes consideration of the regulatory and policy bases of the observed AFSC pattern. Chapter IV (Award Fee Contracting--A Commentary) discusses the empirical pattern presented in Chapter III in terms of the concepts, attitudes and policy interpretations it reflects. It also compares AFSC award fee applications with those in other federal agencies. Chapter V (Contractor Responses to the Award Fee) summarizes the views of a small sample of program-level contractor managers on the effects and other properties of award fee contracting, and on the characteristics of current federal acquisition policy. Finally, Chapter VI (Improvements in Air Force Application of the Award Fee) presents some general conclusions from the empirical and policy review portions of the project, together with recommendations for future research and practice. Complementing the conclusions and recommendations in this last chapter is a Summary at the end of Chapter IV which covers some similar ground.

THE AWARD FEE METHOD OF SYSTEM ACQUISITION

Introduction

As an approach to system acquisition, the award fee method is unique, both in its conceptual underpinnings and in its potential benefits to program management (Hunt, 1974a). To help clarify this, I shall do the following five things:

- (1) describe the distinctive features of award fee approaches to system acquisition;
- (2) explain the conceptual foundations of those approaches;
- (3) identify the acquisition environments in which award fee applications seem to be appropriate and those where it seems inappropriate;
- (4) highlight the special managerial advantages of the award fee in those acquisition environments where its use is indicated, together with some of the conditions which must be satisfied if those advantages are to be realized; and
- (5) review some important technical problems and issues which arise in applications of the award fee; and, sometimes, where the state of the art permits, I shall offer solutions to those problems, but more often, I shall simply direct cautionary attention to their existence.

My intention is to portray the award fee as a versatile management tool which can help government managers focus their efforts toward the solution of problems impeding achievement of program objectives. I hope to show how the award fee encourages technical and administrative innovation, and how it helps establish a framework for exchange between public agencies and private suppliers that facilitates sound managerial decision-

making and effective operational control. And, I shall describe how award fee methods work to compensate contractors fairly for their contributions to the achievement of government goals. The discussion does not, however, advertise the award fee as a contracting panacea. Award fee cannot itself solve all (or even most) acquisition problems. It is, however, a useful way of managing some of those problems and of improving the overall quality of federal system acquisition.

The following pages provide a rather full description of the award fee method together with a characterization of the acquisition environments suitable for its use. But, deliberately, they do not contain a detailed "guide to award fee contracting." There are two main reasons for this: first, because my purpose in writing is more conceptual than procedural; and, second, because, I believe the objectives of the award fee method are best met by allowing latitude for substantial procedural variation in the field. Procedural discretion in award fee applications is both tolerable and desirable, provided that the procedures which are used are grounded in a firm understanding of the goals and theory of award fee contracting. A principal purpose of this report then is to provide this understanding.¹

The text of this chapter is divided into nine parts: I. The Award Fee and acquisition management; II. A Joint Management Model for System Acquisition; III. What is Award Fee? IV. Why is Award Fee used? V. When is Award Fee used? VI. When isn't Award Fee used? VII. How is Award Fee used? VIII. Who is involved in Award Fee administration? and IX.

¹A number of guides or handbooks on award fee contracting have been produced, some recently, by different federal agencies and organizations. Those known to me are listed in the appended Bibliography.

Practical and Conceptual Issues in Award Fee application. Certain key references are cited in footnotes to the text; and a comprehensive bibliography on award fee contracting and related literatures is attached as an Appendix.

I. The Award Fee and Acquisition Management

Provisions for "subjective" fee-determining evaluations of contractors have existed in government contracts at least since the 1950's; and the Cost-Plus-Award-Fee (CPAF) contract, which is based on this strategem, has existed as an established contract-type since the early 1960's.

The 1967 NASA CPAF Guide mentions the use of "variations of CPAF contracts" for aircraft maintenance and overhaul during the 1950's. It goes on to say that (then) current versions of award fee contracting resulted from "independent but concurrent ideas from several individuals during 1960 and 1961" (p. 5). By 1962 both the Navy and NASA were writing award fee contracts (cf. Egan, 1968). For example, a Navy logistic support contract for operations at Kwajalein Island in the early '60s had an award fee provision; and a "pure" CPAF contract was written during 1964 for operation and maintenance of instrumentation and range facilities in Los Angeles. In NASA, meanwhile, the NERVA rocket program R&D contract was CPAF in 1962; and operations, maintenance and engineering services for the Mercury Space Flight Network at Goddard was CPAF in 1963. CPAF contracting was approved "for test" in ASPR in November 1963, at which time its use was envisaged only for level-of-effort contracts.

But it has been during the past decade, as disenchantment with so-called "objective" incentives became widespread in the federal acquisition

community,² that interest in the award fee became genuinely strong. Throughout the '70's both the number and variety of its uses grew, chiefly, one may presume, because the failure of mechanical incentives did not at the same time extinguish interest in performance-contingent fee arrangements for certain contracting situations.

Despite its new-found popularity, however, the award fee remains poorly understood. Little studied, it continues most often to be viewed from the standpoint of traditional acquisition theory. In that context the award fee is simply one among other types of contractual incentive; and its use is principally as a fall-back alternative when "objectification" fails.³ Thus, the conventional wisdom regards the award fee as different from mechanical (objective) incentives only in procedural details, which may not be unimportant, but which are not, after all, basic. Hence, according to the conventional wisdom, whatever theory applies to automatic contractual incentives, with a little fine-tuning, is presumed to apply as well to the award fee.

I have argued that this conception of the award fee, which casually groups it with traditional incentive methods of contracting (i.e., CPIF/FPI), misses its real significance (Hunt, 1974a). Procedural differences do, of course, separate the award fee from classical incentives, but these

²On the question of problems with incentives, see, for instance, Scherer (1964); Booz, Allen & Hamilton (1966); Hunt, Rubin, & Perry (1971, ch. 5).

³It has not been unusual in my experience, for example, to hear the award fee characterized as a "lazy man's incentive," a characterization which affirms its essential community with other incentives at the same time that it states an order of preference among them.

are not its most important features. The award fee method expresses a distinctive orientation to program management. That is what is truly important about it; and failure to appreciate this limits comprehension of the potentialities of the award fee as an approach to acquisition and, hence, impedes its creative use.

In this monograph I shall try to improve (enlarge is maybe a better word) understanding of the award fee by describing its properties and uses, and by providing them with a theoretical basis. To that end, I here construe the award fee as a strategy for implementing what I elsewhere called a "shared leadership" and now prefer to call a "joint management" model of program management and system acquisition (cf. Hunt & Rubin, 1973). Compared with older paradigms, this joint management model, I believe, affords an arguably superior view of the nature and conditions of modern system acquisition in the American pluralist social economy. It is, furthermore, a general model which rests comfortably with such federal acquisition doctrine as the recently revised OMB Circular A-76, and, at the same time, is capable of accommodating as special cases most if not all acquisition techniques that have proven empirically useful (e.g. fixed price contracting and objective evaluation of performance).

Now, theory in the acquisition field, if it exists at all, is largely implicit. The assumptions and propositional groundings of acquisition practices are usually unstated. To make acquisition theory explicit (and thereby testable) one of at least two things may be done. Existing acquisition practices may be examined for their tacit conceptual and normative foundations and explicitly stated as a paradigm. This is essentially the procedure used so effectively by Thomas Kuhn (1970) in his study of the

Structure of Scientific Revolutions; and it is also the one I used to describe the "theory" of contractual incentives (which theory I termed a "fixed price ideology;" cf. Hunt, Rubin, & Perry, 1971, ch. 6). It can be called an "empirical" approach to acquisition theory-building.

Another technique is more "normative." It seeks to model the realities of the acquisition process, per se, and then prescribe suitable implementation strategies (or adapt existing ones to the model). This normative approach is closer to the methodology of this monograph. I shall begin with an outline of an independently formulated model of the acquisition process--the joint management paradigm--and then will discuss award fee procedures in its light. This way, I think, the distinctiveness and the practical potentialities of the award fee as an acquisition strategy can be better perceived.

Before outlining the joint management model I would note that in all likelihood it reflects not at all the thinking of any original designers of the award fee. Such designers may never have actually existed--like Topsy, the award fee probably "just grewed." But if original designers there were, then they most likely held to a traditional fixed price or "formal" market theory of acquisition, and just wanted a substitute for objective incentives when those wouldn't work.

Actually, this statement may do less than full justice to the thinking of certain award fee pioneers in the Navy and NASA. Certainly men were there during the early '60s who were concerned with a wider set of procurement issues than simply how to objectify contractual incentives. Interested, as it were, in contracting "closer to the motivations of contractors," they sought imaginative means of enhancing program outcomes by managing and even capitalizing on so-called extracontractual motivations (i.e.

influences on performance other than contract profit). Instead of the customary emphasis on the primacy of profit motivation, for example, the 1967 NASA award fee Guide--which probably comes as close as anything does to being a statement of an "original" concept of the award fee--heavily stressed the importance of "achievement motivation" as a well-spring of contractor actions; and it plainly advertised award fee contracts as strategies for engaging and directing this potent source of contractor motivation.

Thus there were views of the award fee within the government during the '60's that looked on it affirmatively as an important new general purpose management tool. Indeed, in the Navy, Gordon Rule was inclined to regard award fee as a potential replacement for all other cost-type contracting methodologies. And one may find similar hopeful arguments in two papers by James E. Cravens (1967a & b), who was largely responsible for NASA's 1967 Guide. I suspect, however, that these were minority sentiments then just as they are now.

None of this really matters to our immediate task, of course, except to illustrate the truth of those old adages about necessity being the mother of invention and side-benefits sometimes outweighing the intended consequences of a policy. But I wanted to mention it before continuing, which I'll do now.

II. A Joint Management Model for system acquisition

It will assist understanding of the "joint management" (or, for short, J) model if I first describe another more customary model of customer-supplier relations in government system acquisition. I have elsewhere termed this traditional formulation an "idealized" model of

interorganizational (buyer-seller) relations in government contracting (Hunt & Rubin, 1973). It might alternatively be called a "market" model or a "regulatory" model or even a "bureaucratic" model. I shall refer to it simply as a "formal" (F) model. An F-model conceives

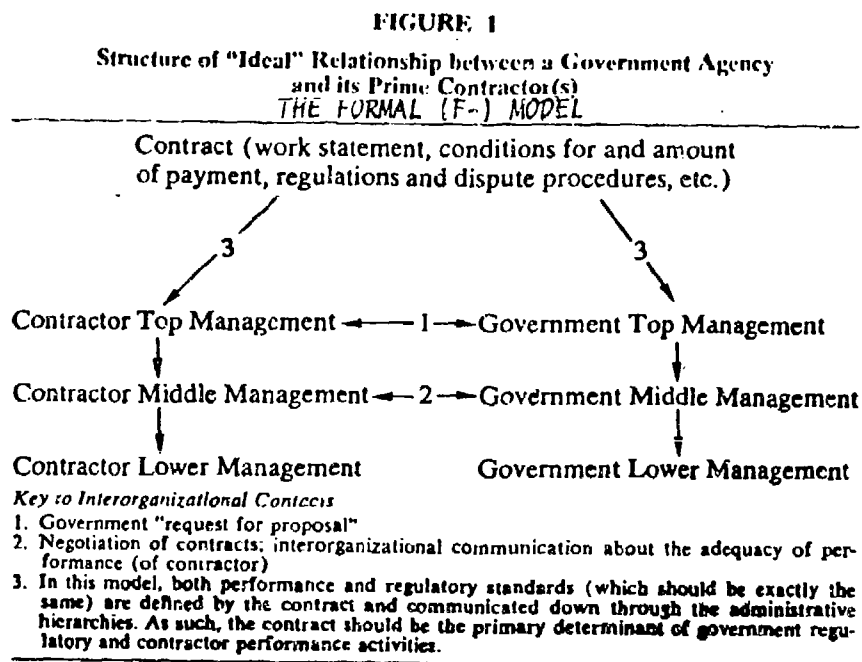
the working relationship between a government [acquisition] agency and its contractors [as] a formal, transitory task-relative conjunction of structurally and operationally independent parties. The separate rights, obligations, and functions of each party are clearly defined by the contract document which is ostensibly the sole basis of their relationship. Within constraints imposed by the terms and conditions of this legal agreement, each party functions autonomously: their actions, though complementary, are independently determined and controlled by essentially private *intra*-organizational management decisions.

As shown in Figure 1, the contractor has responsibility for effecting project performance; i.e., producing for an agreed price a technically acceptable output within a given time period. The government's responsibilities are regulatory rather than managerial: it (the government) is charged only with the task of assuring that performance conforms to standards specified in the contract. The government agency may partially regulate inputs and veto outputs, but ostensibly it does not determine "throughput" processes.

The relationship nominally is formal in another way also: interpersonal contacts between the two organizations are restricted and prescribed. For example, only occupants of certain specified government positions can instruct the contractor about performance.

Furthermore, cross-organizational personnel interactions are controlled and regulated relative to both defined task functions and temporal points in the life cycle of a contract.

This idealized model is predicated on the assumption of a well defined contract as the vehicle for bringing two separate systems into temporary operational coincidence. The contract, along with statutes and regulations pertaining to procurement processes, is assumed to identify unambiguously all relevant operational expectations (product requirements, costs, etc.) and to express mutual agreement and understanding by both organizations.



On research and development projects, however, the uncertain nature of the task greatly reduces the probability of fulfilling this condition. The complex technology involved in development of

sophisticated aerospace or weapon systems makes it difficult to dimensionalize and quantify performance specifications in advance of project operations. Lack of previous experience, the necessity for innovation, and unknown contingencies produce technological and managerial uncertainty which militates against *a priori* assignments of [reliable] cost estimates, product capabilities, and so forth.

Alternative Responses to the Weakness of the Ideal Model

To the extent that project requirements and conditions for performance are uncertain or vague, the contract alone cannot effectively control performance. Rather than being fixed, managerial goals and regulatory standards tend to become fluid, improvisational, and reactive to internal, task, and environmental occurrences. Pressure mounts for fuller and more varied customer-contractor communication than is provided for in the formal model so that over its life span project objectives can undergo progressive re-definition with increasing task experience and increased understanding of "true" parameters and functional requisites for meeting them.

The strain accompanying high degrees of uncertainty and inconsistency induces a need to maintain consistent yet dynamic relations between government regulatory standards and mission objectives on the one hand, and contractor managerial and operational goals on the other. Increased flexibility and coordination of activities necessitating high rates of communication are required for rapid adjustment to changing and unanticipated situations or developments. The "restricted interaction between autonomous organizations" model

does not provide for this. Therefore, one or more of three adaptations of the nominally separate decision-making structures of the participating organizations may evolve. These adaptations are service contracting, absorption of leadership by expertise, and shared leadership (Hunt & Rubin, 1973, pp. 298-300).

Of the three varieties of adaptation to uncertainty just noted (and there may be others) only the shared leadership (here re-christened joint management) variety concerns us now. The essential feature of this adaptation (model) is a more or less even distribution of power between the participating organizations (i.e. government "buyer" and private "seller").

Formal responsibility for specific activities may be assigned discriminatingly to each organization, but project teams might confer at all levels and try to decide on mutually acceptable courses of action (see Figure 2). Rather than unilateral decision-making, the process of evaluating alternatives is one of discussion, negotiation, and compromise...

What exactly is signified by shared leadership; in what ways or contexts is it expressed? Government-contractor cooperative management can be illustrated in three areas--marketing, dispute settlement, and performance evaluation (and accounting) techniques.

In the marketing area, we have noted the mutual dependence of government buyers and their industrial suppliers. Their symbiotic relationship is exhibited in marketing activities where *both* contractor and government attempt to discover the needs of the country and assess the adequacy of current procedures for meeting

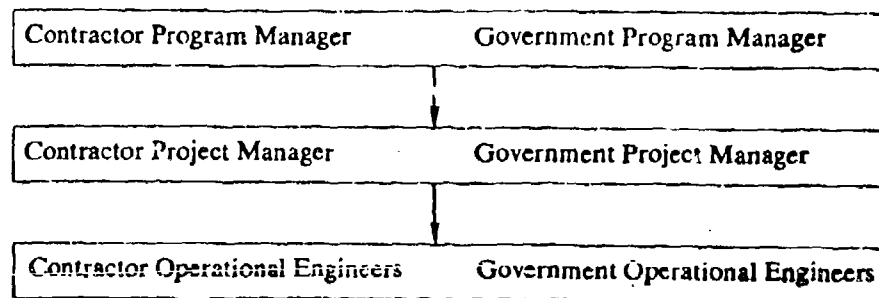
them. The degree of cooperation and reciprocal influence entailed in setting requirements is suggested in the statements of an official of a large government contractor: "A new system usually starts with a couple of military and industry people getting together to discuss common problems--it isn't a case of the government here and industry here. They are interacting continuously at the engineering level." As Galbraith (1969) has commented, "The important thing is not where the action originates but in fact that it serves the common goals of the military and the defense contractors" (p. 37).

Dispute settlement tends to take the form of informal discussions between the conflicting individuals. If they fail to resolve their difficulties, the dispute is passed up to the next level of management. At this tier, informal negotiations are resumed. This cyclical process continues until a settlement is reached. The point is that both parties strive to keep the process friendly and informal, attempting to avoid intervention by third-party, legal or quasi-legal appeals, although this is the normal manner of settlement specified by the contract and procurement regulations. Legal and other formalistic procedures are resorted to only when informal negotiations break down, or if the costs of compromise are excessive to either organization.

With regard to performance evaluation, as a contractor increases involvement in government business, an increasing number of administrative adjustments are made to facilitate interorganizational communication and compliance with regulations (ASPR). In the

extreme, "locked-in" major contractors may simply absorb government accounting methods, management systems, and performance evaluation programs. The distinguishing organizational boundaries between government agency and contractor industrial firm become progressively vaguer. From an external perspective (e.g., that of a small subcontractor), the two organizations may seem and commonly are operationally indistinguishable. When this degree of inter-organizational penetration occurs, it may be accurate to regard the contractor as a component sub-system of the larger government system or to regard the two conjointly as an emergent performance unit or system partially distinct from their respective putative sources.

FIGURE 2
Shared Leadership Decision Structure
THE JOINT MANAGEMENT (J-) MODEL



Just as the F-model is "idealized," so is its J-counterpart. Real-world situations are unlikely to correspond fully to the assumptions of either model. But, however unhappy the thought may be to some, the real world of R&D or major system acquisition in the U.S. unquestionably corresponds more closely to the approximations of a J-model than to those

in F-forms.⁴ The award fee, whatever may have been the thoughts and intentions of its originators, may discover its greatest virtue as an operational means of acquiring goods and services under a J model of the complex organizational and decision processes inherent to modern system acquisition with all its uncertainties. With this in mind we shall move now to an examination of award fee practices themselves.

III. What is the Award Fee method of acquisition?

Award fee denotes a method of paying profit (fee) to a contractor (seller) based on unilateral judgments by the government (buyer) about the contractor's performance. It provides an effective tool for program/project management by arranging to compensate contractors for their performance in ratio to its correspondence with the government's needs and objectives.

FIGURE 3

Objectives of the Award Fee

- (1) Effective Program/Project Management
 - (2) Equitable Performance-based Compensation to Contractors
-

As defined by the DAR (3-405.5; Cost-Plus-Award-Fee [CPAF] Contract), the award fee is

a cost reimbursement type of contract with special fee provisions. It provides a means of applying incentives in contracts which are not susceptible to finite measurements of performance necessary for structuring incentive contracts. The fee established in a CPAF contract consists of two parts: (1) a fixed amount which does not

⁴Concrete illustration of this is Sapolsky's (1972) description of the ambiguity of just who "ran" the Polaris Missile Project.

vary with performance, and (2) an award amount, in addition to the fixed amount, sufficient to provide motivation for excellence in contract performance in areas such as quality, timeliness, ingenuity, and cost effectiveness. Award fee may be earned by the contractor in whole or in part. The amount of award fee to be paid is based upon a subjective evaluation by the Government of the quality of the contractor's performance, judged in the light of criteria set forth in the contract. The number of criteria used and the requirements which are represented will differ widely from one contractor to another. Therefore, when determining criteria and rating plans the using activity should be flexible and select a plan which will motivate the contractor in a positive way to improve performance. Evaluations are furnished to the contractor to afford him an opportunity to comment on the evaluation findings. The decision that award fee has been earned is based on the reports of performance made by the Government personnel knowledgeable with respect to the contract requirements. This decision is a unilateral determination made by the Government not subject to the Disputes clause of the contract.

FIGURE 4

Properties of the Award Fee

- (1) Base Fee
 - (2) Award Fee
 - (3) After-the-fact Judgmental Evaluation of Contractor
Performance
 - (4) Evaluated-based Payment of Award Fee
-

IV. Why is Award Fee used in system acquisition?

Whenever substantial uncertainty exists in a performance environment (as it does in R&D, for instance) a method of management--problem-solving, decision-making, and control--is needed which is both adaptable to this uncertainty and helpful in reducing it. Furthermore, structures for managing contract-based acquisition must necessarily be interorganizational

in design whenever the government satisfies its acquisition needs chiefly by contracting with private firms in a quasi- or non-market situation. Methods of managing the acquisition process must, therefore, explicitly recognize the government's need to participate actively in that process.

FIGURE 5

Functions of Award Fee

- (1) Adaptable to Uncertainty
 - (2) Allows Government to Participate in Project Management
-

The award fee approach to acquisition helps the government deal with these two management imperatives--coping with uncertainty and active participation--in a variety of ways.

- (1) It recognizes that in a mixed (public-private) sector quasi-market acquisition process, with important technical uncertainties, a high degree of cooperation between contractor and contracting agency is essential to program success;
 - (2) It assures a meaningful role for government managers in the acquisition process;
 - (3) It recognizes that, because of limitations on time, skill and information, top managers can formulate plans, but, except in unusual cases, rarely can exert detailed control over organizational operations;
-

- (4) It stimulates both formal and informal communication across organizational levels and boundaries, especially as between contractor and government managers;
- (5) It recognizes that contractors' motivations (like the government's) are varied;⁵
- (6) It leaves to the contractor's own management the task of "motivating" their employees and helps minimize needless meddling by government personnel;
- (7) It recognizes that the acquisition process may be, and often is, a dynamic one which presents a changing variety of problems that must be dealt with by human managers, for which there are no contractual panaceas;
- (8) It avoids rigid, mechanical, predetermined contractual formulae for fee and other decisions, in favor of flexibility and active human judgment;
- (9) It simplifies contractual provisions as a means of decreasing administrative complexity and burdensome routines; and
- (10) It helps assure that profits are earned by providing for variable fees to be paid after-the-fact on the basis of performance.

FIGURE 6

Hallmarks of Award Fee Acquisition Strategy

- (1) Encourages Government-Contractor Cooperation
- (2) Assures Active Role for Government Managers

⁵ On points (3), (4), and (5) see, for example, Hunt (1971). Some of these points are also discussed here in a later section.

FIGURE 6 (cont.)

- (3) Recognizes Limitations on Top Management Ability to Control Operations
 - (4) Stimulates Formal and Informal Communication
 - (5) Recognizes Variability of Motivations
 - (6) Leaves to Contractor Task of Motivating Own Personnel
 - (7) Views Acquisition Process as Dynamic
 - (8) Is Flexible and Provides Room for Human Judgment
 - (9) Simplifies Contractual Provisions
 - (10) Helps Assure that Profits are Earned
-

Each of the above-listed award fee "hallmarks" rests on one or more propositions about the nature of the acquisition process. These propositions "explain," as it were, why it is desirable that an acquisition strategy have characteristics summarized by the hallmarks. Obviously, then, the defensibility of the award fee as an acquisition strategy stands on the validity of the propositions that form its rationale. I turn to this important matter now. For the purposes of the discussion, each award fee hallmark will be restated as a proposition, and, in the course of reviewing each one, I shall indicate how the award fee accomplishes the strategic objectives implicit in the propositions signaled by the hallmarks.

- (1) Mixed-sector quasi-market acquisition under uncertainty requires cooperation to be successful.

This proposition is a key to comprehension of the fundamental features of federal contract-based acquisition to which the award fee is

oriented. It contains four basic terms needful of definition and discussion. These four terms are: mixed-sector; quasi-market; uncertainty; and cooperation. ("Acquisition" and "successful" are left undefined for now.)⁶

Mixed-sector acquisition denominates the fact that contractual acquisitions (unlike arsenal types) involve exchanges between public and private sectors of the economy. These exchanges

- are multi-institutional and interorganizational,
- represent mixed motive and mixed interest situations, and
- involve a public interest.

Contract-based acquisition (which we shall henceforward term, federalist acquisition) is exchange between a government "buyer" and a private "seller."⁷ Therefore, it represents an exchange across the boundary of the two principal institutional subdivisions of the social economy: public and private. More particularly, it represents an exchange between certain specific agencies of these two institutional sectors, i.e., between government bureaus and private firms. Finally, and still more

⁶"Acquisition" can be generally understood to be an extended process combining procurement and program management functions. It is commonly divided into stages, i.e.: conceptual, validation, full scale development, production, deployment, each of which has associated program decision points. "Success," meanwhile, is a frightfully complicated notion (cf. Sapolsky, 1972) which itself is deserving of careful analysis, but not here, except for some special comments later on. Very loosely, success here means the extent to which a program/project achieves the government's objectives. Left unanswered by this simple statement, of course, are whole regiments of very difficult questions, ranging from how to express (indeed, identify) government objectives to how their achievement can be evaluated.

⁷Nothing more than this is meant by the use of the word "federalist" here (cf. Brand & Watts, 1969, which is a precedent for this usage). The word "contractualist" might have been used to convey the same idea, but I have another use for that term.

particularly, it represents an exchange between specific operational (line) units or suborganizations within these agencies. Thus, federalist acquisition involves complex transactions between a multiplicity of organizations nested within organizations and societal institutions. Transactional exchanges in this federalist environment tend often to be accomplished by hybrid mixed-sector (J-model) interorganizational structures which both span and blur organizational/institutional boundaries.⁸

Each of the organizational/institutional parties to federalist exchange represents a "package" of interests.⁹ These interests will be varied and relative to the several properties of the subsystem memberships and missions of participant organizations, none of which will be individually or collectively single-interest entities (that is to say, for example, that business firms are not pure profit maximizers).

Some of these interests will represent the "going-in" goals brought to the exchange by the separate parties. A contractor, for instance, may have specific profit goals, or may seek a buy-in simply to absorb overhead or keep some engineers working. For its part, the government may be seeking satisfaction of a specific military requirement; and it,

⁸ More is said below about these phenomena.

⁹ At the risk of seeming pedantic, we wish to distinguish between interests and motives, if only as a terminological convenience. Interests are political considerations having to do with social objectives (missions) and the conditions of their accomplishment. Both organizations and individuals have interests; but only individuals have motives, which we think of here as generalized personal dispositions of the kind suggested by such ideas as needs for achievement, fears of failure, and the like.

too, may have targetted profit positions for its contractors. These goals may or may not change during the transaction. But, in any event, the interests (going-in goals) of any one party will not precisely correspond to those of the other(s) (usually they will partially overlap--indeed, at some level they must, or be thought to, in order for an exchange to occur). Hence, in the exchange, the parties will seek to achieve some different and some common (but usually separately derived) goals. Since not all the individual goals that may be set for the exchange are shared by the parties, there is a potential for conflict. Hence, negotiation of the terms of exchange is necessary, and a continuing means of settling disputes, as well as motivation for doing it, is also required in order to maintain the structures of exchange for any time.

In addition to the interests brought to an exchange by the parties (their going-in goals), other interests emerge in the process of structuring the exchange. These goals which result from the interactions of the parties and the plans for their future association may be termed "emergent" goals. Some of them will be unique to the separate parties, others, reflecting common objectives and methodologies for the exchange, may be shared; and emergent goals may supplant some or all of the going-in goals. In negotiation, for example, the government may modify technical specifications for downward adjustments of cost targets; and a contractor may trade a particular profit position for a government furnished facility. The basic negotiated work statement will become a generally shared objective, although, when the "crunch" comes, it often happens that, consistent with their different interests, contractor and government managers disagree about its precise meaning. At any rate, it will be uniformly true that the emergent system-level goal structure for an interorganizational

exchange cannot be easily or safely predicted solely from a knowledge of the separate parties' going-in goals. The new negotiated contractual environment is the "real world" within which the government and contractor define their interests and play out their relationship (cf. Pfeffer & Salancik, 1978, on "negotiated environments").

An especially interesting, and problematic, case of emergent goals results when hybrid public-private organizations are created to perform an exchange (as, for example, when a government line organization contracts with a private firm for services in support of activities for which the government organization has operational responsibility). Among the emergent goals likely from such J-model arrangements is a subset having to do with maintenance of the hybrid organization, including especially its particular complement of actors. This familiar phenomenon is sometimes known as a form of "going to bed with the contractor," a somewhat vulgar expression which, nevertheless, clearly suggests what it is that is problematic about the phenomenon, namely, its potential for compromising the distinctive interests of the parties.

Among these distinctive interests is a public interest. Public interests do not derive from the organizational interests of functional agencies, public or private. They are normative matters connected to the general sociopolitical and institutional properties of society. However, government, and its agents, has a special stewardship responsibility for the public interest, in short, a public trust. This interest and trust, therefore, has a special standing among the going-in goals of government agencies in J-model federalist acquisitions. And it is this goal which needs preservation from compromise in the structuring of mixed sector exchange.

Quasi-market (or nonmarket) acquisition means that, in one way or another and for one reason or another, federalist buyer-seller transactions occur in an environment of full or partial "market failure." The marketplace cannot be relied upon as a neutral mechanism for regulating exchanges: partisan negotiation (or haggling) will occur. The buyer faces hazards from potential "opportunism" by the seller, and, of course, the seller faces similar hazards from the buyer.¹⁰

Uncertainty means simply that information about parameters for planning and conducting an exchange is incomplete. Given that human beings are not omniscient, but are limited in their abilities to obtain, process, retrieve, and interpret information, situations which are complex (technologically, administratively, or otherwise) may be treated, ipso facto, as uncertain, and vice versa. Thus, because of the "bounded rationality" of humans, uncertainty and complexity become functionally equivalent conditions.¹¹ And, it should be mentioned that complexity is a universal correlate of large-size. Large-size (organizationally, say) is, therefore, a prima facie indicator of complexity/uncertainty.¹²

Human rationality is bounded, but, alone or in organizations, humans nevertheless seek to make sense of (rationalize) themselves and their environments. They collect, code and interpret information in order to reduce the uncertainty around them and thereby facilitate its management.

¹⁰ Fuller elaboration of these ideas may be found in O.E. Williamson (1975).

¹¹ See March & Simon (1958) and Cyert & March (1963) from whence these concepts derive.

¹² A study of the literature on this point may be found in McClintock & Hant (1979).

They seek and maintain contrivances (languages, customs, organizations, theories, etc.) that help with this by absorbing uncertainty and simplifying their worlds (cf. Weick, 1979). The test of these contrivances is less their "truth" than their utility. And this helps explain why it is necessary to replace acknowledged but, for practical purposes, "useful" falsehoods (e.g. the traditional theory of the firm) with something no less "useful" (practical) if the falsehood is to be abandoned, as a guide to policy, say (Kuhn, 1970, makes similar observations).

Thus, uncertainty absorption is not limited by standards of truth. But plainly some methods of doing it are superior to others, on benefit-cost considerations: they work better for more things with fewer unwanted side-effects. Uncertainty absorption is not only restricted by the bounds of human rationality, however, it is also impeded by "information impactedness."

Information impactedness occurs when information is distributed asymmetrically among the parties to an exchange (and the costs of achieving parity are high, and/or dispositions to opportunism exist) (Williamson, 1975). Impactedness will tend to occur (in fact, is probably inevitable) in multiparty exchange simply because "insiders" know things "outsiders" don't. Similarly, in organizations, functional specialization (complexity) and finite communication channel capacities tend to produce information impactedness. Clearly, uncertainty reduction at system-levels (read, effective management of complexity) requires solution or, at least, accommodation to the problem of information impactedness.

Cooperation. In a multi-party J-model exchange under uncertainty/complexity (including impacted information), cooperation is an obvious requirement for successful performance. Both information and norms of conduct (the terms of the exchange, discussed earlier) must be shared--

the more so the more there is large size and functional specialization, which is to say, the greater is complexity. Such cooperation implies a relaxation of adversary attitudes, integrative management information (communication) systems, and interorganizational structural interpenetration.¹³

The award fee approach to acquisition seeks to facilitate cooperation by establishing conditions as close as possible to a "natural" buyer-seller relationship: viz. one characterized by a personalized, collaborative understanding among the parties and a desire to avoid conflicts.¹⁴ This is accomplished by inducing a climate of fairness and relative working-level informality.

Contractor evaluation and fee determination, while nominally unilateral and hence potentially arbitrary, is, however, performance-based and made on known standards according to known Evaluation and Fee Determination Plans (discussed below) which themselves are subjects of negotiation. And the contractor receives full and regular feedback on these evaluations, together with the opportunity to respond to them and present other information. Thus, the final data base for evaluation and fee determination is intendedly comprehensive and unbiased, or, in other words, fair.

Providing for review by higher-level government managers of first-line assessments, and, of course, the role of the FDO (fee determination official) help keep the award method free of bias, as does the practice of providing Evaluation Plans for consideration of both performance levels

¹³ A somewhat fuller development of these ideas may be found in Hunt, Rubin, & Perry (1971, Ch. 3). See also Patterson (1977).

¹⁴ This is discussed at length in a landmark paper by S. Macauley (1963).

and the conditions under which those levels were achieved. In this connection, the basically judgmental nature of award fee evaluations affords a flexibility which facilitates full consideration by government managers of contextual or other factors exogenous but relevant to performance outcomes.

Informality at working levels is encouraged by the award fee method's recognition of the mutual dependency of contractor and government in jointly managed enterprises under uncertainty. The award fee approach seeks to avoid interposing between the parties any needless contractual, organizational, or conceptual barriers that would diminish the frequent cross-organizational interaction, information sharing and other communication necessary for successful joint problem-solving and eventual satisfaction of government needs.

Informality is also encouraged by the award fee approach to evaluation. In view of the judgmental nature of the award fee method, it is to be expected that contractor managers will continuously seek information from the government managers, who are their evaluators, on the government's preferences and the degree of its (government's) satisfaction with the contractor's performance. In addition to stimulating communication, this has the desirable consequence of encouraging early informal settlement of conflicts and helping to assure timely identification and solution of unexpected program/project operational problems. Moreover, since both the government and the contractor tend to gain from these favorable outcomes, their working relationship is improved by them and trust and communication are further enhanced.

To this point we have stressed the fact that the realities of federalist acquisition under uncertainty demand interorganizational cooperation.

But they also demand circumspection. The government's stewardship of the public interest limits its ability to cooperate with private organizations; and it prescribes a need for institutional control of conjoint (J-model) public-private sector undertakings. (That this circumspect approach to cooperation by the government will assure a similar posture on the parts of the private firms with which it works goes without saying.)

This essential circumspection, then, necessarily attenuates any "naturalistic" buyer-seller cooperation in federalist acquisition. Yet, it is the intention and the function of award fee methodologies to induce tendencies toward it (naturalism, that is). Those tendencies need to be controlled in the public interest, but not sacrificed. Obviously, this is something of a managerial challenge. Unfortunately, except for the higher-level reviews of lower-level managers mentioned above, there is nothing in the award fee technology which automatically accomplishes it. It is a challenge left fundamentally to the judgment, skill and integrity of individual managers. This is probably inevitable anyway; and, in any case, it is hardly unique to award fee contracting. Indeed, the award fee approach (and the J-model of the acquisition process) has the merit of explicitly recognizing the control issue and its ethical accompaniments instead of pretending that it has been somehow eliminated by contractual magic.

It follows from the preceeding discussion that mixed-sector quasi market acquisition under uncertainty, with its cooperative requisites, cannot be conducted in an ordinary "arms-length" manner, as if between buyers and sellers in a classic free market (i.e., according to an F-type model). Instead, acquisition under these conditions must be

collaborative (J-type), if, at the same time, closely attentive to the public interest. Thus, the government must participate in the acquisition process as well as in its input and output. In these circumstances, then:

- (2) a meaningful role must be assured government managers in the acquisition process.

Achievement of this J-model goal is facilitated in the award fee approach by its shared-management requirements, and by avoiding the interposition of contractual or other barriers between government and contractor managers, and between government managers and their management tasks. Unlike traditional incentive contracts, for example, the award fee approach seeks to introduce no mechanical means of rendering management decisions. Instead it endorses the proposition the human effort can make a difference to program outcomes and seeks to establish an inter-organizational framework for the active exercise of managerial judgment by both contractor and government personnel. It is, thus, a "managerialist" rather than a "contractualist" approach to acquisition. Instead of putting management in a role as servant to contractual ends, it casts the contract in a role as servant to managerial ends.¹⁵

Properly applied, the award fee can facilitate establishment of a program management environment conducive to disciplined planning, innovative human decision-making, and, ultimately, better achievement of the government's goals through effective program control. The method, how-

¹⁵ Sapolsky (1972) has persuasively argued that, by formalizing relations, incentive contracts had the administratively illogical effect of transferring program management to contractors. Award fee methodologies, I suggest, can be seen as ways of transferring it back, or, at least, of enhancing the government's program management role.

ever, assumes motivation on the parts of government managers to take an active role in federalist acquisition processes, as well as in formulation of the specifications and policies that initiate and regulate them. In short, to work effectively, J-model acquisition and the award fee method require government managers, together with the contractor's, to be operational decision-makers, and not merely contract or program monitors. The method helps assure such a role in the acquisition process by firmly establishing the government's managers as effective evaluators of contractor performance--effective because their evaluations have direct profit (fee) as well as other (e.g. reputational) consequences. This rather more visible role of the J-model decision-maker can, of course, expose the government's people to novel risks of making mistakes and being seen doing it, but that probably is a necessary risk of program management under dynamic, uncertain circumstances.

- (3) The third award fee hallmark cum proposition is to the effect that top managers rarely can exert detailed control over organizational operations.

Uncertainty/complexity, bounded rationality, information impactedness, and vested interests resulting from suborganizational differentiation combine to loosen the coupling of organizational elements and defeat detailed hierarchic control. The result is subunit and individual discretion in behavior and, hence, effective decentralization of problem-solving and decision-making, whether or not that is organizationally intended (cf. Williamson, 1975).

This is a difficult intraorganizational control problem which becomes still more difficult in an interorganizational situation. For one thing, the likelihood is that information will be impacted at various points in

a counterpart organization as well as in one's own. Therefore, it is necessary to develop communication channels not only within one's own organization, but also across the boundary with another. Moreover, because of decentralization, these communication interfaces must be multiple; and, because of the shifting problem-solving needs in a dynamic environment, they must be ad hoc.

Obviously working in these conditions places a heavy premium on a free and informal flow of information across numerous interfaces of inter-organizational systems. Arrangements for accomplishing this which provide for boundary-spanning only at top management levels are insufficient to the task. For successful acquisition to occur under conditions of uncertainty, in its specifications or operational environments, there is need to

- (4) stimulate both informal and formal communication across a variety of organizational levels and boundaries, especially as between contractor and government managers.

Unlike "contractualist" approaches to acquisition, the "managerialist" award fee method does not address itself only to the contractor's top management. Nor does it envisage only top-level contractor-government interfacing. For one thing, award fee Evaluation and Fee Determination Plans (see below) provide formal channels of communication between contractor and government organizations, and across levels within the government's own organization. One may safely assume, surely, that contractor organizations develop comparable channels to assure their own internal information flow. But, in any case, it was described earlier how the award fee approach orients to difficulties of multi-party management under uncertainty, both allowing and, by its information-sharing

requirements, stimulus multiple interfacing and informal communication among and between contractor and government personnel. Thus, it encourages a working environment typified by opportunities to establish communication interfaces at any organizational level where problems exist, where information needs to be obtained, or where decisions must be made.

- (5) The next proposition simply states that organizational motivations--contractor and government both--are varied.

Because we wished to emphasize aggregate (i.e. organization level) strategic considerations, we spoke previously in quasi-political tones of the multiplicity of organizational "interests" that become converted to goals or act as standards for evaluating the results of exchange. We now wish to speak in more psychological and tactical terms. Therefore, we shall talk of "motives." Now, the distinction of motives from interests is a fine one; and it is unnecessary to address it here in more detail than we have already, especially since, in practice, interests and motives aggregate to a single functional class of organizational "dispositions" (and internal criteria for outcome evaluation). Besides, at this point, we do not wish to review the large subject of organizational motivation. But we do need to make one essential point, namely, that contractors are not monomotivational profit maximizers. Nor, for that matter, are they monomotivationally anything else. Like individuals and the government, contractors have a variety of motivations which change in importance with time and circumstance.¹⁶

¹⁶ For a wide-ranging review of the nature and role of profit in business behavior, which makes these points among others, see Friedman (1978).

In the theory of the firm, the utility of profit maximizing assumptions is arguable (see Williamson, 1970 ch. 3, for an illustration), possibly even viable, but only under a set of further assumptions not likely to be satisfied frequently in federalist acquisition environments. For practical purposes, however, especially for acquisition management under uncertainty, it is crucial when planning exchanges (i.e. contracting) not to:

- confuse assumptions (e.g. profit maximizing) made for theoretical modelling with a proven fact of nature; or to
- identify any one aspect of organizational motivation (e.g. profit "motivation") with the whole; or to
- confuse an outcome of performance (e.g. profits) with an input to it (e.g. motivation--profit or other); or to
- identify micro-level (e.g. individual) characteristics with macro-level (e.g. collective) ones.¹⁷

Profit is an attractive business goal (interest) but not an overriding motive; profits may result from business behavior without being causes of it. And profit maximizing, whether frequent or not, is probably a special case, not the general case of business behavior (see Hunt, 1969, for fuller development of these points). Furthermore, whatever may be the strategic macro-level goals of firms, they must cope in tactical decision-making with a multiplicity of suborganizational interests (goals) and individual motives. Defining an objective function for the firm under these conditions of reality--or, more exactly, for a particular procurement--

¹⁷ B.H. Klein (1977) refers to this as the "fallacy-of-composition error."

is a complicated matter, which is made more so by continuing subsequent needs to harmonize and control subunit and individual action in the service of maintaining or controlling redefinitions of this objective function, once defined.

In an acquisition, the government buyer's "preferences" are input to this definitional process. But it is impractical for any number of reasons for the government to undertake in any direct way to "motivate" contractor personnel to make their decisions solely or even mainly on the basis of government preferences (as some incentive trade-off schemes seem to try to do). Most particularly, the government cannot by some contract mechanism (e.g. an incentive structure) "reach into" the contractor's organization and comprehensively control decision-making according to its (the government's) preferences, even if those preferences are well-defined (which they often are not). In fact, attempts at this may only be disturbing because of the complexity (uncertainty) they introduce. Thus, as is true in the government's house

(6) it is best to leave to the contractor's own management the task of motivating their employees.

The award fee approach to acquisition does not depend for its efficacy on any special assumptions about the primacy of profit motivation, nor on any particular view of contractor motive hierarchies. And it requires no commitment to a dubious belief in constancy of motivation at either organizational or individual levels. Instead, it assumes motivational variety and changefulness as organizations respond to shifting circumstances of their unique environments; and it is open-minded on the subject of what motivates people and organizations, at least in particular places and times.

It is true, of course, that award fee contracts provide fee payments (in dollars) to contractors for performance. But, they do so with a clear understanding that money has symbolic significances in addition to its more obvious uses and not from any firm commitment to a profit maximization model of contractor motivation. Fees paid to a contractor have meanings relative to a variety of intra- and interorganizational motive systems. The magnitude of fee awarded to the contractor carries information, for instance, on the judged quality of performance, and everything connected thereto--testimony to technical excellence, to satisfaction of the government buyer, and so on.¹⁸ Thus, in the language of behavioristic psychology, money is a generalized reward.

Further, the award fee method of implementing J-model acquisition avoids assumptions about how motivations at micro-organizational (individual) and macro-organizational (system) levels are coupled. It does not seek to plan complex contractual means of manipulating either motivations or substantive (operational) decision-making in the contractor's organization. It looks upon such stratagems as impracticable, and instead sets out to establish an interorganizational framework for performance of a program of work. It specifies at least provisional government preferences regarding that work and its outcomes, and goes on to state contingencies for its performance, including any associated with reward for it (i.e. payments of fee); and it arranges (in fact, induces) a joint information communication system for control of the program's workflow. Finally, it

¹⁸On this question of the multi-functional nature of profit, see Friedman (1978) especially the chapter by Kenneth Arrow, "Why profits are challenged" (Ch. 3) and the commentary by Gabriel Hauge (pp. 117-120).

embodies all this, directly or by contractual reference, in an explicit Evaluation Plan, which is subject to change in the face of changing conditions of performance.

Except for this general plan, the award fee method leaves the task of "motivating" people and their decisions to the contractor's own management. Of course, it does the same for the government's management. (It will be recognized that, in practice, the preceding statement will be only approximately true. In the relative informality of award fee environments organizational boundaries tend to blur, which leaves open to some question exactly "who it is who manages whom.")

We noted earlier, in passing, the ideas made explicit by the multifaceted proposition basic to the seventh award fee hallmark, namely that (7) the acquisition process may be, and often is, a dynamic one which presents a variety of problems for which there are no contractual panaceas.

Federalist acquisition under uncertainty is, by definition, a dynamic affair--problems emerge in both anticipated and unanticipated shapes, sometimes with discouraging frequency. It is not an environment in which the "standard operating procedure" is useful very often or very long. Nor is it a simple deterministic environment subject to control by the most carefully planned F-type contractual nostrums.

In fact, even well-crafted multiple incentive contracts are necessarily simplistic in their assumptions about the environment of their application (management of uncertainty/complexity), and consequently dangerous; first, because they give an illusion of control, and, second, because they discourage active management, most especially on the government's side. Yet, it was just seen how the control of discretion in the acqui-

sition process, especially as regards continuing attention to government preferences, probably depends on a human management "presence."

The government, after all, is the only party to the acquisition relationship who knows whether or not its "preferences" are being satisfied. If the government buyer is to avoid ultimate disappointment with an acquisition outcome, it must be in a position to monitor processes-- to sense and troubleshoot "problems," and then provide useful feedback to the contractor's operations personnel and their managers about the government's satisfaction with what's happening. Plainly, then, J-type arrangements are needed for the government to share in federalist acquisition management and exercise judgment and influence over its processes as well as its outputs.¹⁹ It is important, therefore, to

- (8) avoid rigid, mechanical, predetermined contractual formulae for fee and other decisions, in favor of flexibility and active human management.

The award fee does this chiefly by inducing a relative informality in the interorganizational performance system and by avoiding overemphasis on mechanical contractual constraint of the working relationship between government and contractor. For instance, exempting award fee determination from the conventional contractual disputes clause contributes to its flexibility as an evaluation and performance control measure. Furthermore, the fact that the Evaluation Plan (normally) is not included in the contract does the same thing by making it easier to change, as and

¹⁹ Contrary to the "mythology," Sapolsky (1972) has shown in the Polaris development case how little formal management systems (PERT, etc.) had to do with its outcomes and how much personalized, active management did.

when conditions warrant it. This feature has the special advantage of allowing the government to change its preferences during the course of a contract and to communicate those changes directly to the contractor in a timely and effective manner. These messages are especially likely to capture a contractor's attention because of their fee payment implications.

Federalist acquisition under uncertainty, we have stressed, faces the formidable task of managing complexity.²⁰ This requires time, attention, effort, and, above, all, imagination. It requires an organizational climate and structure conducive to problem solving, not one bureaucratically designed primarily for the routine performance of preprogrammed activities, or one overladen with administrative detail, or one where ostensibly helpful management methods serve instead to worsen management problems by adding procedural complexity. Therefore it is desirable to:

(9) simplify contractual provisions as a means of decreasing administrative complexity and burdensome routines.²¹

The award fee contract is (or can be) structurally simpler than most incentive-types, certainly more so than the multiple incentive varieties with complex trade-off matrices (which, happily, now have fallen into disuse). Indeed, this simplicity is a major point in favor of the award fee strategy.

From the standpoint of management, however, an award fee contract is (or should be) more demanding to administer--especially in the ways

²⁰ As was noted earlier, uncertainty equates to complexity, in an information processing sense.

²¹ Simplification of acquisition policy and procedure will be remembered as among the major recommendations of the Commission on Federal Procurement (1972).

it requires involvement of line managers (government as well as contractor). Furthermore, the formal requirements for award fee-based performance evaluation and fee determination are exacting and time-consuming, particularly for high-level government personnel.

Consequently, despite structural simplicity, award fee contracts impose an administrative burden.²² This fact argues for extra care in assuring their structural simplicity, e.g. by keeping them focused on a relatively few essential performance parameters. But it also argues for care in the use of award fee arrangements and the selection of evaluation factors. Because they may be costly to administer, award fee contracts should be used only when their potential benefit to the government is clear and when the size or importance of a project/program (or the significance of a performance factor) is worth it. "Burden," after all, is relative to project/program scope, and contracting methods need to be matched to both the nature and scope of the acquisition and the limited resources available for program/project management.

Finally, if it is desirable that contractors receive profits, so is it desirable that those profits be earned (with the stress on earned). There is ample reason to believe that this norm is breached when "profit" is a result of based fee setting or is otherwise fixed in advance of performance. The monetary rewards got by bad performers are then no worse than the ones got by good ones. To be sure, there may be other than direct monetary costs to contractors of bad performance, but they

²² A recent NASA in-house study found, for instance, a greater volume of "paperwork" among CPAF contracts than among CPFF varieties, and other indications (see below) are in the same direction. Larsen (1978), however, in a study of GOCO contracting in the Army, argues that the extra effort of award fee is "worth it."

may not be very great in practice; and, in any event, if it is to have any effect on performance, profit or fee must at least be sensitive to variations in it (performance, that is). Therefore, it is at least appropriate and probably imperative that contracts

- (10) assure that profits are earned by providing for variable fees payable after the fact on the basis of performance.

Because it relies on ex post performance-based fee determinations instead of cost-based fee setting or fixed fee in advance of performance, award fee contracting comes closer than most other methods to fulfilling the principle that profit should be earned, not awarded in advance. By the same token, eschewing mechanical means of automatically awarding fees (as in traditional incentive contracts), which may express more about contract structure (and its negotiation) than it does about contractor performance, works in this same direction.

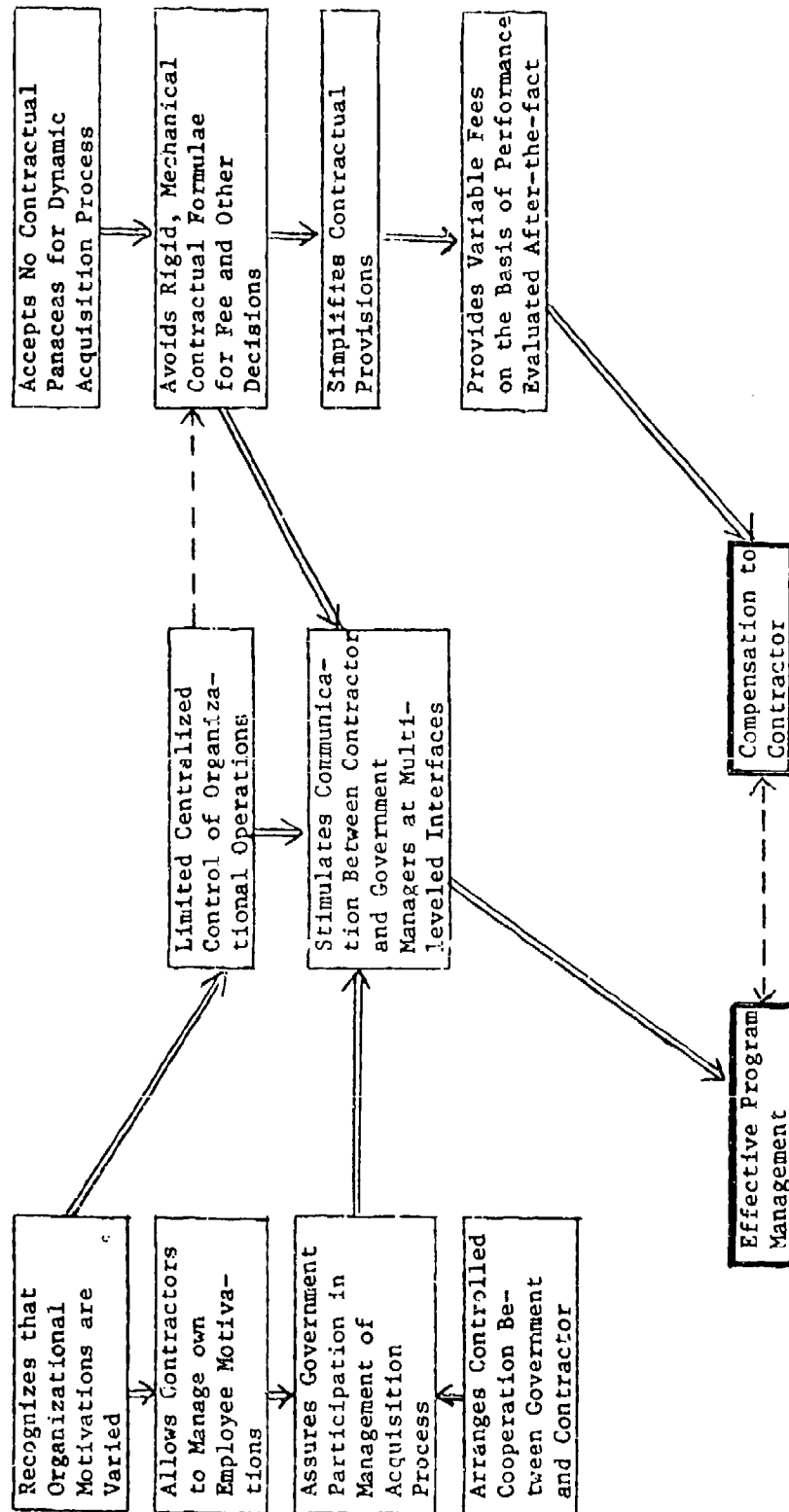
Figure 7 summarizes the ten features of the award fee approach to acquisition which we have just discussed, and their interrelations. This figure also depicts the mechanisms by which the award fee methods contribute to the dual objectives of J-model system acquisitions: viz. effective management and fair compensation to the contractor.

V. When is Award Fee used?

The award fee method of acquisition is intended for use whenever both of two program conditions are met: (1) when the government's principal managers determine that uncertainties exist which preclude rigorous specification of contract performance parameters or price, thereby

FIGURE 7

Summary of Award Fee Hallmarks, Their Hypothetical Relationships, and Links to Overall Program Objectives



introducing significant program management problems;²³ and (2) when the magnitude of the contracted work or the potential benefit to the government is sufficient to justify the administrative costs of the award fee procedure.

FIGURE 8

Conditions for Use of Award Fee

- (1) Uncertainty-induced Program Management Problems
 - and
 - (2) Program of Sufficient Size/Significance
-

Historically, award fee applications have been concentrated in cost-type contracting and level-of-effort (e.g. support services) environments. But, keeping in mind the caveat on program-size noted above, award fee provisions may be introduced into any contractual environment where uncertainties exist, and at any point in the acquisition process. One may write a cost-type contract for R&D, for example, in which award fee is the sole contractual method of providing compensation to the contractor. The result is a standard cost-plus-award-fee (CPAF) contract. In addition to R&D, such contracts have been widely used in the acquisition and management of support services ranging from technical operations and maintenance to custodial and food services, installation security, and operation of tour guide services.

²³This condition is essentially equivalent to the suggestion contained in a DoD policy paper that use of award fee is "appropriate where management is the decisive factor in performance." (Hq. USAF Contract and Acquisition Policy--Director of Acquisition Policy 16 March 77--attachment to letter from Director of Procurement Policy to Major Air Force Commands).

To give a different example where the award fee provision is not the sole or even basic method of compensating a contractor, one may write a fixed price contract for the bulk of a program (e.g. production of an aircraft) with a provision for additional award fee-based payments in some delimited area of activity where uncertainties (and management requirements) are prominent. In this case a firm-fixed-price (FFP) contract with an award fee component results, for which such notation as FFP/AF would be appropriate.²⁴

The A-10 aircraft program illustrates this second kind of supplementary award fee application. An award fee component was added to a basic fixed price incentive (FPI) contract as a means of motivating contractor attention to logistics implications of design alternatives. Via the award fee, the contractor was encouraged to consider not only immediate development costs, but also the potentially greater long-term costs of aircraft ownership, and to effect dollar trade-offs in the government's interests.

Acquisition plans such as the A-10's suggest a whole range of opportunities for special-purpose bonus-like applications of the award fee to achieve important national goals. Some of these goals may be relatively contract-specific, as was the case with the A-10, an acquisition which exemplifies the potential utility of the award fee for managing total and/or life cycle system costs. In addition to logistics, the award fee method is adaptable to other imaginative uses in acquisition and program management: for instance, in motivating contractors to control

²⁴Since the award fee is defined by the ASPR as a cost-type contract, it is necessarily subject to the fee limits imposed on such contracts. The Federal Acquisition Regulations (FAR), when they are issued, are not expected to alter the substance of the ASPR's provisions on the award fee.

overhead or to improve their quality assurance programs, and generally for encouraging contractor performance beyond contract minima, when such improvement is in the government's interest.

The award fee supplement can also be applied to gaining government objectives which are not contract-specific, but which are nonetheless vital. These might be termed "boiler plate applications," and might orient, for one thing, to stimulating technical innovation (and increased industrial productivity), and, for another, to the accomplishment of socioeconomic goals. Incentivizing energy conservation and improvements in manufacturing technology are possible award fee applications in the technical area; and, affirmative action goals may be feasible targets for award fee supplements to many fixed price or other prime and subcontracts.²⁵

VI. When isn't Award Fee used?

The use of the award fee method in acquisition is contraindicated when, for any of a variety of reasons, the goals and advantages of the method, which were described above, are of little or no interest to the government. These reasons will tend to reduce to one or more of the following:

(1) the government can confidently rely on the marketplace to protect its interests (as in genuine price-competitive procurements, standard off-the-shelf buys, or the like), and can express its confidence in a fixed price contract to which change is unlikely; or

²⁵I am speaking here only of the feasibility of these applications, not of the wisdom of them. That would have to be decided on grounds other than simple feasibility. In fact, I tend toward skepticism about the desirability of using award fee outside core management problem areas, and of course I fear its promiscuous overuse.

(2) the government, by applying in-house expertise, can itself effectively reduce uncertainties of cost, performance, etc. to trivial proportions and, again, resort to fixed price contracts; or

(3) the planning and administrative costs of award fee procedures exceed any potential benefits from their use, or are infeasible for technical reasons. In such circumstances, if the work is R&D or support services, say, resort may be had to cost-plus-fixed-fee (CPFF) contracts; or, if the award fee was considered primarily as a special-purpose add-on, perhaps to a production contract, retention of a uniform fixed fee contract may be best.

FIGURE 9

Contraindications to use of Award Fee

(1) Existence of effective marketplace, and ability to enter fixed price contract

or

(2) Availability of in-house expertise to reduce uncertainty, and ability to enter fixed price contract

or

(3) Cost of award fee exceed benefits (then use CPFF)

VII. How is Award Fee used?

Application of the award fee concept requires these three things:

(1) specification of a set of performance factors on which the contractor will be evaluated by the government;

(2) specification of procedures, including criteria, for evaluating performance on these factors; and

(3) specification of a means of translating performance evaluations into dollar equivalents for fee award, together with specification of the times at which these awards will be made.

FIGURE 10

Using Award Fee

- (1) Specify set of performance factors
 - (2) Specify procedures/criteria for evaluation
 - (3) Specify dollar equivalents for (2)
-

(1) Specifying Performance Factors. Virtually any discriminable aspect of contractor performance can be selected for evaluation as a performance factor, providing only that it be measurable and substantially under the contractor's control. Features of schedule, technical performance, cost, or management method may be selected as performance factors; and they may be defined in terms of outputs, inputs, or processes. Undoubtedly the most common award fee applications have been to features of program/project output (or contract outcome). Awards have typically been associated with parameters of performance quality (e.g., aircraft speed), delivery schedule, or cost. However, it was suggested above that award fee provisions also may be contractually applied to such input factors as personnel recruitment (e.g. to achieve affirmative action goals) or contractor investment in plant and equipment, to name just a couple of possibilities. They can

be applied as well to program throughput: for instance, to stimulate value engineering efforts, quality assurance programs, management accounting procedures, information management systems, and even specific management techniques, such as management by objectives.

It is important, however, that award fee applications be carefully planned. Each evaluation factor needs a rationale that makes clear its accessibility to timely, dependable measurement, its potential for control by the contractor, and its relevance to the government's acquisition goals.

FIGURE 1:

Performance Factors

May be: cost, schedule, performance quality,
management

Must be: measurable, controllable by contractor

In principle, any number of factors may be selected as evaluation targets; but, for simplicity and certain technical reasons, which are discussed later, it is best to focus on a relatively small set of factors carefully selected to represent the government's principal interests in the contract.

(2) Procedures for Evaluating Contractor Performance on Target Factors.

To evaluate performance one must do four things:

1. specify the criteria which will be used to evaluate each factor; these may refer to features of the contractor's actual

performance (e.g. reduction of overhead, in dollars) or to the government consumer's satisfaction with that performance (e.g. maintenance of liaison with government managers);

ii. specify a means of operationalizing the evaluation criteria as measurements capable of reliably detecting meaningful variations in contractor performance on the factors targetted for evaluation²⁶;

iii. specify a means of gathering (reporting) information relevant to the selected evaluation criteria and the method defined for their measurement²⁷; and

iv. specify the environments (including the evaluators) and time periods in which evaluation will take place. This requires identification of where, when, and by whom information about the contractor's performance is to be gathered, by whom it

²⁶ A variety of adjective scales (satisfactory...unsatisfactory), numerical rating scales (1-10, 0-100), and letter grades (A-F) have been used for this purpose, when the measurements to be made are judgmental. Direct, nonjudgmental measures may also be used (e.g. miles-per-hour, total cost).

²⁷ The "raw data" from which performance measures are derived usually are some kind of narrative report. These reports (and any supporting records) need to be in a form which documents the performance in question, and includes information on the criteria specified for gauging its quality, and is consistent with the measurement technique intended for use. For instance, if it is planned to evaluate the quality of a contractor's communication with a government program manager, using a ten-point rating scale, the record of the contractor's communications must be such as to indicate ways in which it impacted helpfully or adversely on the program manager's ability to manage; and the record must be sufficiently detailed to allow discrimination of 10 different levels of performance. A simple record of frequency of communication, by itself, would be an insufficient data base.

is to be evaluated, and when. Multiple parties having different functions or levels may be involved in these activities.

FIGURE 12

Evaluating contractor performance

- (1) Specify criteria
 - (2) Specify measures
 - (3) Specify means of gathering/reporting data
 - (4) Specify who, where, when will evaluate
-

(3) Determining Fee. Translating the results of performance evaluation into dollar equivalents for fee award requires basically these three things:

- i. a procedure for aggregating factor evaluations (when multiple performance factors are being evaluated) to yield an overall evaluation which can be a basis for final fee determination;
 - ii. a method of calculating dollar fee equivalents of the performance evaluations;
 - iii. specification of time periods (e.g. quarterly) and any conditions for fee award; and
 - iv. identification of the parties responsible for such calculations and fee awards.
-

FIGURE 13Determining Fee

- (1) Aggregate evaluation measures (total score)
 - (2) Calculate fee equivalents
 - (3) Specify periods (and conditions) of award
 - (4) Name official responsible for award
-

Planning Award Fee Applications. For purposes of both contracting and subsequent administration, negotiated solutions to the three above-stated requirements for award fee application will be incorporated into two plans.

These are:

- A. An Evaluation Plan, which will describe the performance factors selected as targets for evaluation (requirement 1), and the method of their evaluation (requirement 2); and
- B. A Fee Payment Plan, which will describe how, based on the evaluations produced under the Evaluation Plan, fees will be paid to the contractor (requirement 3).

FIGURE 14

Planning Award Fee Application

•Evaluation Plan--

...performance factors

...method of evaluation

•Fee Payment Plan--

...method of translating evaluation into fee,

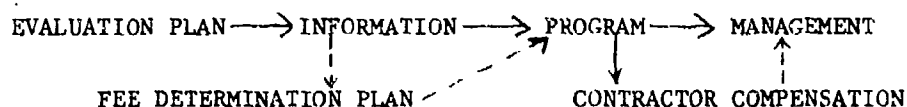
by whom, and when

Obviously these two plans are interdependent and must be developed in close coordination. The Evaluation Plan is an input to the Fee Payment Plan and, hence, as was described above, must satisfy the needs of that plan. The Fee Payment Plan, in turn, states the monetary consequence (to the contractor) of the use of the Evaluation Plan, and must therefore be consistent with the latter plan's provisions. Together, the Evaluation and Fee Determination Plans define a charter for structuring an organization and allocating responsibilities for administration. It is important to keep in mind this interdependency and the need for linkage and agreement among Evaluation and Fee Payment Plans that results from it. It is also important, however, to recognize that the Evaluation Plan has a significance and a use separate from (although not inconsistent with) its function in fee determination. It also serves a broader program/project control function, stimulating and structuring a steady flow of information across organizational boundaries.

If this second (control) function of the Evaluation Plan is overlooked the award fee method may be denied its greatest potential value, namely its utility as a management tool. The control function of award fee justifies, even demands, elaboration of the Evaluation Plan beyond the bare requirements of input to fee determination, although, plainly, such elaboration must always remain subject to consistency with the Fee Payment Plan. The critical point is that developing an Evaluation Plan is more than a matter of arranging for contractor compensation, although that's certainly part of it. More basically, it is a process of constructing a management plan for assuring a timely flow of essential information necessary to effective and creative program direction and control. These ideas are schematized in Figure 15. What this diagram says is that

FIGURE 15

Award Fee as a Management Tool



the award fee Evaluation Plan generates information which is directly useful in program management. This information, when related to a Fee Determination Plan, also provides input to a management decision on contractor compensation, which in turn, has bearing on program management processes.

It will be apparent then that considerable care and effort is called for when preparing and harmonizing Evaluation and Fee Payment Plans. Moreover, it is important to remember that the award fee is intended for use in circumstances characterized by significant uncertainty. Hence, allowance for change in the particulars of Evaluation and Fee Determination Plans is crucial to realization of the method's potential for enhancing program management in dynamic environments.

VIII. Who is involved in Award Fee administration?

Administration of an award fee contract involves an organization of at least three levels of government managers. At the highest level is a Fee Determination Official (FDO) who is responsible for final decision on fee awards to contractors (although possibilities exist, at this and other levels, for arbitration arrangements to manage disagreements). The FDO is also responsible for making any changes in Evaluation and Fee Determination Plans.

The lowest organizational level is, naturally, the working level where government managers are situated who can provide the contractor performance measurements called for in the Evaluation Plan and can recommend changes in that Plan if they seem desirable. These managers are commonly called Performance Monitors (PMs).

Depending on program size or complexity, the award fee organization may provide for several intermediate levels between the FDO and PMs. There will, in any event, be at least one such level, consisting of a committee or board responsible for: a. receiving and reviewing the evaluation reports of PMs, contractor commentaries, and other information; b. bringing

a general management perspective to bear on the evaluation process;
c. recommending, according to the Fee Determination Plan, an amount of
 award fee to the FDO; and d. recommending changes in Evaluation and Fee
 Determination Plans to the FDO. This Performance Evaluation Board (PEB)²⁸
 would consist of relatively high management personnel, one of whom would
 serve as Chairperson, usually with authority to call meetings, acquire
 supplementary information, name PMs, etc.

FIGURE 16

Participants in Award Fee process

- Level I -- Fee Determining Official (FDO)
- Level II -- Performance Evaluation Board (and Chair)
- Level III -- Performance Monitors

The design of the organization for award fee administration, and
 the identities of its members (by title/function, not name) should be
 anticipated in the Evaluation and Fee Determination Plans, as negotiated
 with the contractor. This planning and such vital implementation acts
 as naming PEB members normally will be the responsibility of a program
manager. It will then be decisive to the success of any award fee
 application that its participants understand both the nature and goals
 of the acquisition and the theory and basic methodology of award fee
 contracting. Training for the latter may be necessary.

²⁸In Air Force terminology, an Award Review Board (ARB).

IX. Practical and conceptual issues in Award Fee applications

In this section I shall review several issues that arise in award fee contracting. My intention is to highlight certain key points which require careful attention when developing award fee Evaluation and Fee Determination Plans because they may heavily influence the success of those plans. Six issues will be discussed, namely: (1) selecting and measuring performance factors, and (2) devising control strategies, both of which have to do with Evaluation Plans; and (3) conversions of award fee to other methods, (4) reward vs. penalty in fee awards, (5) the level of the FDO, and (6) the frequency of fee award, all of which relate to Fee Determination.

(1) Selecting and Measuring Performance Factors. This issue is divisible into several sub-issues: a. deciding on the kinds of performance factors to use, and b. on how many to use, and c. on whether to weight performance factors differently, and d. on how to measure the factors chosen.

a. What kinds of factors? Earlier it was noted that virtually anything relevant to a program's implementation could serve as an award fee performance factor, provided it was measurable and at least partly controllable by the contractor. Traditionally, however, emphasis has been placed on outcome factors (cost, performance, quality, etc.) partly perhaps as an expression of a results-oriented management philosophy. Goal-setting and output evaluation clearly are important in acquisition planning and management, but there is need, too, for attention to throughput process indicators. For one thing, without them, there may at times be nothing of consequence to evaluate. Meaningful program results often can be a long time in coming; and, in a managerialist environment, one will

wish, in any case, to be able to anticipate and influence results. This requires information on what's being done as well as on what's coming out of it. If one is to understand a given result, it is necessary to have information on the processes (methods) that produced it. So, sound Evaluation Plans for acquisition management will include both outcome and process (method) indicators among the performance factors targetted for appraisal.

b. How many factors? In practice this is a hard question. One may answer it by saying, "A few important ones," but that may not help much. Unfortunately, it isn't possible with general advice to do much better than that. The problem is: how much information can be managed and usefully applied to performance evaluation and eventual fee determination? It may sometimes be necessary in day-to-day management to gather information on large numbers of factors. But for purposes of evaluation, large numbers of factors, when aggregated, often have mutually cancelling effects that render them insensitive to net performance characteristics. Therefore, performance factors on which evaluation and fee determination are planned should be kept few in number and limited to considerations of special importance to the acquisition. And, whenever multiple factors are targetted for performance evaluation, careful consideration needs to be given to methods of aggregating them, and to their validity as indicators of net performance and fee entitlement.

c. Should performance factors be weighted for aggregation? It seems reasonable on the face of it that, relative to its sensitivity to net performance, an aggregation method which weights factors for their "importance" will be superior to one that doesn't. The technical liter-

ature on measurement, however, remains undecided about the utility of the practice as a means of discriminating between levels of aggregate performance.²⁹ The complexity of the processes for determining appropriate cross-situational weights for performance factors is considerable. Certainly it is impractical for actual acquisition purposes; and arbitrary, hit-or-miss, intuitive guesswork is hardly a substitute for empirically derived weighting. For now, then, the solution to the problem of weighting performance factors for aggregating on net performance seems to be, don't do it. It probably is best to employ for evaluation a small number of equally weighted performance factors.

d. How are performance factors measured? The award fee method is one designed to give government managers opportunities to render fee-determining judgments on the quality of contractor performance instead of having those decisions made mechanically by a contractual device structured ex ante, or else not made at all. The problem of transforming judgments into measurements has not been seriously faced in the award fee framework, however. There seems never to have been a serious study designed, for instance, to identify usable measurement units for rating contractor performance. Certainly there has been no empirical attempt at determining the differential validity of various methods of award fee grading. Lacking such fundamental information and technological development little advice in the matter of measurement technique can be given to the field.

²⁹ For instance, research on both life satisfaction and on job satisfaction has demonstrated no clear advantages to weighting, and some disadvantages (cf. Andrews & Withey, 1976).

This is essentially a problem in psychological measurement (psychometrics), which is a reasonably well-developed field. Psychometric attention to the award fee evaluation process is clearly overdue; but, in the meantime, measurement techniques for award fee evaluation of contractor performance might best stress face validity and be kept simple.³⁰

(2) Control Strategies for Award Fee Evaluations. In a previous section of this document we spoke of "controlling" the J-model cooperative government-contractor relationship in order to safeguard the "public interest." Now we speak of "control" in a narrower (but not entirely unrelated) sense, referring to the regulation of organizational processes. One such control problem, a baseline problem, relates closely to the measurement questions we were just discussing.

a. Selecting baselines for making award fee judgments. Persons experienced with them frequently find that, with time and repetition, award fee judgments seem to become "stereotyped." Current grading tends to be "anchored" by previous grades. This is a baseline problem. It refers to an evaluator's need for some standard of reference, and it is a procedural problem which is still unresolved in award fee theory and methodology. Regarding it, practices vary: sometimes the last score given to a contractor is deliberately taken as a baseline for a current evaluation; sometimes an imaginary "average" contractor is taken instead;

³⁰ For example, a rather simple face-valid measure of satisfaction with a contractor's management methods might be this:

"With regard to providing timely information to the government on program status, the contractor's methods are"

adequate:__:__:__:__:__:__:__: inadequate

and sometimes an imaginary "excellent" contractor is used. Each of these alternatives presents some rather obvious difficulties, and, unhappily, there is no factual basis for choosing among them, or for suggesting others.

The "previous score" baseline presents a special problem that should be recognized. The active (J-model) role of government managers using the award fee technique is expected to help "shape" contractor behavior. This shaping implies a "growth" pattern in contractor performance quality (a learning curve, in essence). At any rate, it generates a legitimate expectation of performance improvement from one evaluation period to the next. But, since management in the award fee environment is shared as between government and contractor, improvement in the contractor's grades may also be construed as an indirect measure of the performance of government managers, and thereby motivate them to self-aggrandizing grade inflation, much as college professors are sometimes accused of doing in order to get better evaluations of their courses from students.

The risk of some kind of spurious grading is present in any of the award fee baseline strategies mentioned above, and the solution to reduction of this risk is not yet obvious. This is a basic problem not only of the validity of individual evaluation scores, but of the pattern (i.e. learning curve) of scores across evaluation periods that might be used to test the power of the award fee method as an acquisition management tool. From theory, we expect award fee grades to improve (to a point, at any rate). The practical problem is to assure that grade increments mirror genuine performance increments.

b. Plateaus and ceiling effects. Improvements in contractor

performance quality may not follow a smooth growth curve. Instead it may develop stepwise and, at some point, become subject to ceiling effects. There is the same question here of scope validity that was mentioned before, but there is also a problem of rationalizing relations between an Evaluation Plan and a Fee Determination Plan. This problem can be seen by considering the question of whether or not equations for paying fee on the basis of performance grades should take account of the increasing difficulty of improving performance at progressively higher levels. This is a complicated question that ramifies to other questions about the fairness of fee award and what it is anyway that motivates (or controls) contractors' performances. Like many other questions posed here, this one has no straightforward answer. Fosing it, however, has the salutary effect of causing acquisition planners to consider utility functions: how much performance is really wanted, given the costs of getting it? which, of course, is the question basic to design-to-cost policy aspirations. It also raises a similarly useful question for acquisition managers to answer: at what point has actual contractor performance become "good enough" to allow a simpler and administratively cheaper method of management (e.g. CPFF or FFP)?

(3) Converting Award Fee Contracts to Other Forms. The preceding discussion leads to consideration of the problem that award fee arrangements are sometimes continued beyond their usefulness in an acquisition. For all its virtues, the award fee method is a costly, administratively demanding technique, with certain cumbersome qualities. I have advised that its use should be restricted to situations of sufficient scope and uncertainty that its virtues are worth its costs. Except perhaps in highly

simplified forms, award fee should not be used in small acquisitions. Even in larger acquisitions that may have justified its use initially, a time may come when conversion to something else is wise. There are at least two conditions when this is true: (a) when uncertainty has been reduced to trivial proportions, and (b) when the costs of trying to produce marginal changes in contractor performance, even if wanted, have become too high.

If, in the course of an acquisition, uncertainty has disappeared, fixed price contracting is feasible and appropriate. The case of plateaued (at an acceptably high level) contractor performance is different. Substantial uncertainty may still exist in the performance environment, but, like a small procurement, award fee-based efforts to improve the quality of the output are simply not cost effective. Conversion to a CPFF contract (for support services, say) would then be appropriate (and would satisfy Grant's, 1978, arguments for simplification of service contracting). Or, if it were preferable to remain within the basic award fee arrangement, even with an "excellent" contractor, the fee pools could be broken into small "pots" and given out routinely at intervals unless the contractor has a documentable problem. This procedure differentiates between tactics suitable to a development phase of performance and others acceptable for performance maintenance. A penalty system may be acceptable in maintenance phases, even if it is inappropriate for developing performance levels to some given level (see below). Certainly a penalty system is simpler to monitor and cheaper to administer. And there are indications that, at higher levels of performance, contractors in award fee environments tend to orient mainly to drops in their grades. These

drops act as "flags," focusing management attention on problem areas when these can be sensibly expected to be few in the overall flow of the acquisition. The award fee administrative method then becomes analogous to "management by exception," which has the further virtue of reducing the costs of control.

The kinds of contract conversion talked about above are well-advised, when conditions are right. Otherwise, they are ill-advised. Also ill-advised is another kind of conversion: transformation of judgmental award fee evaluation techniques into mechanical incentive fee-like forms which effectively defeat award fee goals. Evidently this comes about, on the one hand, because of contractor disquietude about the unilateral nature of award fee evaluation, and, on the other hand, because government managers become uncomfortable with making "subjective" evaluations. Certainly a genuine issue in award fee technique is how to make judgmental measurements. I spoke earlier about some aspects of this issue. The point here is that the issues are not resolved by converting award fee evaluations into automatic incentive-like formulae for fee determination, they are only evaded. Such conversions, moreover, sacrifice the virtues of award fee contracting, which is necessarily a "high-conflict" mode of operation, for nothing more than the apparent safety and comfort of impersonal formulae.

(4) Award Fee as a "Reward Only" Process. The basic award fee method represents a kind of "bonus model" of compensation. It also represents an application of certain theoretical ideas from the psychology of learning (and behavior modification). Without going into detail, these ideas counsel as most efficient an approach to shaping performance based on so-called "positive reinforcement" (reward), rather than on "negative rein-

forcement" (punishment).³¹ In addition, there are other indications that reward-based transactions help facilitate the kind of cooperative multi-party exchange envisaged in J-model award fee theory. Simply put, the award fee method is not conceived as a penalty process. In that sense, as well as in others, it differs from the incentive methods with which it is often misleadingly associated.³²

Still, it must be said that very little actual data exist on which to defend reward-only practices for award fee. Indeed, a variance from the reward-only norm was suggested above. Although theory is clear on the point, the theory itself is not well-grounded empirically. It is an interesting and important question, therefore, whether and when rewards or penalties make practical differences in acquisition output, especially given indications, mentioned before, that commonly risk-averse contractors may be more quickly aroused by threats of loss than by prospects of gain. In fact, this attitude would be expected whenever contractor organizations are motivated more by a fear of failure than by some kind of achievement motivation. At least that is what one would conclude from the literature on individual social behavior. But, plainly, this is another of those areas where more research is needed.

³¹ Cf. R.G. Hunt (1974b, ch. 3) for a discussion of reward vs. punishment in supervisory performance control.

³² The so-called "Martin Incentive" is an explicit penalty arrangement, for example, in which the total performance fee is paid to the contractor and the contractor must pay back to the government any amount lost for less than standard performance during operation.

(5) Who Should Be the Fee Determination Official (FDO)? Obviously it is appropriate that the identity (level) of the FDO should vary with the magnitude if not the type of acquisition. It is generally desirable that the level of responsibility equate to the level of official authority; and, too, high-level review of contractor performance is a basic award fee control provision. But, there is a risk of setting the level of fee determination so high that review and fee determination will be so awkward, infrequent, and removed in time from actual contractor performance as to make it useless as a means of affecting contractor performance. In the absence of evidence that contractor performance is indifferent to the timeliness (or magnitude) of fee award, arrangements for fee determination should be as near as possible to the time period of performance being evaluated. It follows from this that nomination of an FDO should be subject to this constraint as well as to others already mentioned. In one sense this has nothing to do with the level of the FDO, but rather with his/her work load and consequent ability to make timely fee awards. But, since the two tend to be correlated in practice, a good rule of thumb suggests that the FDO be at the lowest organizational level which is consistent with the responsibility involved and with the need for FDO review/control to be credible to the contractor. This might then be a negotiable matter.

(6) How Frequent Should Fee Determination Be? Fee determination is more than a method of disbursing payment to a contractor. Its managerial intention is to capture the contractor's attention and provide feedback on vital features of performance. In other words, it is intended to influence performance. To be useful, this feedback needs to be:

- unambiguously associated with a performance parameter over which influence is sought,
- timely, so that performance adjustments can be made before it is too late, and
- frequent, to allow fine tuning, so to say, of performance programs.

Thus, subject to practical feasibility, award fee determination should be frequent (e.g. quarterly) and, ideally, coordinated to the contractor's accounting schedules; performance evaluations should be still more frequent (e.g. monthly). In fact, it remains unclear whether it is the fee awarded the contractor or the performance evaluation, per se, which is the primary motivational factor. For practical reasons as well as theoretical ones this is an important question for research (consider, for instance, the relevance of the matter to selection of the FDO).

That I should end this discussion of award fee concepts and methods with a suggestion for research is appropriate. The general case for the award fee as an acquisition strategy is persuasive enough, I think; but, as I mentioned at the beginning, it has been too little studied. There are many questions about it and its methods of implementation that research could resolve. I've noted some of them, but there are others which skeptical reflection would disclose, especially among the complex propositions I offered as award fee "hallmarks."

III

AN AIR FORCE SYSTEMS COMMAND AWARD FEE SCENARIO

This scenario depicts the general pattern of award fee application in the AFSC. It was constructed on the basis of reviews of award fee plans and related documents for some 15 AFSC programs, plus interviews with 35 Air Force technical and procurement people from these programs (and related offices). In addition, one meeting of an award review board was witnessed, and a variety of other pertinent documents examined.

General

Most, if not all, applications of the award fee in the AFSC reflect a traditional concept of the method. CPAF is usually seen as fitting "between CPFF and CPIF." A typical policy statement on the award fee describes its purposes as motivating superior contractor performance, rewarding effective contractor management, and inducing high rates of communication between program offices and top contractor management.³³ In the main, policy holds the award fee to be inapplicable any time a program can be assessed "objectively" in its entirety; and conversion of CPAF to CPIF (or FPIF) is favored whenever a point of "definition" is reached which "allows" it.

In addition to CPAF-type contracts, AFSC policy encourages use of CPIF/AF (or CPAF/IF, depending on which incentive structure predominates), and also FFP/AF contracts (FPI/AF are used as well). In these mixed incentive arrangements (expressly authorized by DAR 3-405.5[h]) it is assumed that predetermined ("objective") incentives will be applied

³³CF. Hq. AFSC/PMPS "Guide to Award Fee" (Dec. 1977); SAMSO/RS OI 70-5.

to cost, and award fee provisions applied to performance/schedule or other factors, including management.

Some AFSC policy statements declare the award fee to be inappropriate for subcontracting, although it has been used for that purpose. The A-10 aircraft program mandated award fee for major subs, and established separate award fee pools and evaluations. Another, the Space Transportation--Payload Integration Contract, (STS-PIC), noted the possibility of using award fee for subcontracts, provided that the fee was derived from the prime contractor award fee pool.

Award Fee Planning. In order to implement the award fee contractually a suitable clause must be placed in the contract as a special provision. This clause will include description of general areas of evaluation, dollar amounts available as award fee, evaluation periods, and identity of the fee determining official, as well as certain other details (such as exclusion of fee determining from appeal).³⁴

In addition to the award fee contract clause, a more detailed Award Fee Plan must be written prior to initiation of contract performance. This plan, which will be the focus of the discussion here, is primarily the responsibility of the concerned program office, although input to it from other sources (DCAS, etc.) is recommended.

Final approval of the Award Fee Plan by the fee determining official is required before its implementation; and various provisions exist for prior review at Command or higher levels (major programs, for example, require coordination at Air Staff).³⁵ As a feature of acquisition

³⁴Cf. Hq. AFSC/PMPS "A Guide to Award Fee" (Dec. 1977); Hq. USAF/CAP "Concept Paper" (Mar. 1977).

³⁵Cf. DAR 3-405.5(h) AF Suppl. 17 June 1977; DAR 3-405.5(e) AFSC Suppl. 24 March 1978; and other DAR Command/Division Supplements (e.g. ASD DAR Suppl. 22 June 1979).

strategy development, these reviews seek to ensure (prior to release of RFPs): (1) the suitability of the plan and its consistency with existing Air Force policy; (2) its compliance with the DAR and other pertinent regulations (e.g. DOD Directives 5000.1 and 5000.2); and, for major programs, (3) that award fee determination can be organized at an Air Force secretarial-level, if that seems desirable.

The need for appropriate variation in award fee planning is generally recognized in the AFSC by stressing the need to tailor evaluation methods and standards to individual programs; and, in fact, the details of actual award fee plans do exhibit substantial variation across AFSC programs and functional organizations. A tendency toward procedural standardization is evident within these organizations, however, up to and including use of a common predefined award fee review board in SAMTEC (justified there as being in the interest of exercising "strong internal control" over the award fee process). As a result, Award Fee Plans for programs within AFSC functional organizations are apt to be similar procedurally, but significant differences may exist when these plans are compared with programs of other functional organizations (e.g. SAMSO vs. ASD, SAMSO/RS vs. SAMSO/YE, etc.).

More generally, the flexibility of the award fee method is commonly emphasized in the AFSC, and encouragement is given to changing plans as conditions change over the course of a program.

A typical Award Fee Plan consists of ten elements (an illustrative face sheet or outline for an Award Fee Plan can be found in Appendix A)³⁶:

(1) a foreward containing: i. citations of relevant authority for the plan (DAR, etc.), ii. a brief statement of a functional rationale

³⁶Cf. also AFSC DAR Supplement 3-405.5(e)(5) 24 March 1978.

for the plan, and perhaps iii. other comments relevant to the organization's acquisition philosophy:

- (2) identification (by office) of a Fee Determining Official (FDO);
- (3) description of an award fee organization (referred to in the AFSC/PMPS "Guide" as an "Evaluation Team") and the duties of its members;
- (4) identification (by office) of a chairperson and members of an Award Review Board (ARB), which may be known by various other names (e.g. Award Fee Evaluation Board, Performance Evaluation Board, etc.);
- (5) specification of a set of factors describing the areas of performance on which the contractor will be evaluated;
- (6) specification of the time periods when performance evaluations will be completed;
- (7) allocations of specific fractions of the total award fee dollars to these time periods;
- (8) specification of procedures for accomplishing contractor evaluations and award fee determination;
- (9) description of the data to be used in these evaluations and fee determination; and
- (10) description of other provisions for interim contractor performance review, feedback of evaluations to the contractor, and contractor response to such evaluations.

These ten elements may be taken as defining two functional award fee subplans: one a plan for evaluating contractor performance (an Evaluation Plan) and another for awarding fee on the basis of this evaluation (a Fee Determination Plan). I shall discuss these plans separately even though, in practice, they are not differentiated.

The Evaluation Plan

In AFSC, as by most other users of the award fee, it is commonly advised that initial evaluation plans and measurement systems be developed in the office issuing the award fee requirement, with assistance from the PCO and possibly others, and that these plans be completed prior to release of a solicitation. Indeed, it has been suggested that award fee plans be included in RFPs and that their details constitute negotiable features of any resulting contract. This is not a widespread practice, however, if, indeed, it exists at all in the AFSC. But, in any case, RFPs must indicate that an award fee provision will be included in any resulting contract; and they must also say something about what the award fee will cover, and specify the FDO's organization.

Timely (e.g. within 30-60 days from contract award) and careful briefing of the award fee plan (with hard copies) to the contractor is viewed in AFSC and elsewhere as essential to assure contractor understanding of it. It is usually recommended that this briefing include an "outline" of the evaluation system to be used. Practice varies with respect to just how much official information a contractor may be given. It ranges from a bare minimum to virtually the entire plan. In most cases, for instance, the contractor is told the relative weights placed on the different performance features that will be used for his evaluation. But sometimes he is not given this information; and other times he is given the absolute weights.

Sometimes the contractor is told who the individuals are who will evaluate him, along with their areas of expertise, but mostly he is not. It is common practice, however, for the contractor to be told

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the Air Force program organizations which will monitor him (and he rather quickly finds out who in those organizations is doing it).

Basic responsibility for award fee planning and management rests with the SPO/Project Officer. More specifically, it resides in what has been aptly termed an "Office of Principal Responsibility," defined as those offices in the SPO and Procurement directly responsible for contractor performance of given tasks.

Award Fee Evaluation Plans, which, in AFSC, vary greatly in their degree of detail, consist of three major features: (1) specification of a set of factors and standards with respect to which the contractor will be evaluated; (2) specification of an organization for conducting evaluations (and fee determination); and (3) specification of processes and management procedures for evaluation (and fee determination).

Evaluation Factors: Often referred to rather casually as "criteria," evaluation factors are features of performance on which contractor evaluation and eventual fee determination will be based. These "targets" are necessarily tailored to the provisions and objectives of a given contract. They are usually divided into general areas of contractor responsibility which will be foci of award fee evaluation, and more specific sub-areas, categories, activities or items by which those responsibilities are implemented.

Evaluation areas generally focus on rather broad functions such as management of subcontractors (or simply, management), problem solving, responsiveness to program direction, and other "management" or "relationship" factors as well as on more usual technical performance quality, schedule, and cost features. For example, the DOD STS-PIC evaluation plan identified "Understanding of Program Requirements" as one evaluation

area. Within this area it specifically identified the items "implementation of program tasks" and "support at software working group meetings" for assessment.

Evaluation factors vary substantially in the specificity with which they indicate expectations about contractor performance. They range from broad prescriptions such as "maintains contact with participating and associate contractors and agencies to coordinate activities" (an item within an area identified as "Test Program Management") to more specific ones like "test and failure reports exceed CDRL requirements."

The factors also vary somewhat in their subjectivity. One such as "prepares and submits test plans and procedures in accordance with CDRL" is relatively non-subjective; while "test plans are viable living documents that provide the basic management tool for the test program" is more subjective.

Evaluation factors (areas and items) are universally ranked to reflect the importance attached to them by the AFSC program office. Using one or another method to do it, these rankings are expressed as a percentage weight indicating the number of award fee dollars from the total potential award fee pool associated with each evaluation factor. Certain policy sources recommend that no weighting be less than 10%. As far as evaluation areas are concerned this dictum is well-honored in practice; but, when weights are applied to items within areas, many of them carry less than 10% of the total (cf. SAMSO 70-, Draft Award Fee Guide, March 1979).

Ordinarily weights are a priori and judgmentally determined. On TIPI/MAGIS, however, they were empirical.

"The engineering man-months of each Task are summed and the ratio of the individual Task man-months to the total man-months

is determined. These ratios are the weighting factors for each Task. The numerical weightings are each multiplied by the weighting factors, and the results summed for each category (Completeness, Technical Quality, and Technical Management), to give a total weighted numerical rating for each category" (ESD, TIPI/MAGIS-SIC, Award Fee Evaluation Plan, 1 Oct. 77, p. 12, Step 9).

In addition to areas and items, a third kind of more concrete performance factor is often encountered in AFSC award fee plans. These may properly be called criteria. Multiple performance criteria are typically organized to reflect groupings of increasingly demanding performance expectations (see Appendix B-1). The extent to which the contractor meets these expectations, or performs effectively on the functions specified (e.g. "completion of tasks without prodding") then serves as a criterion for awarding an adjective rating (excellent, good, etc.) to the performance of the evaluation item and, ultimately, the larger evaluation area (cf. SAMTEC matrix, Appendix B-2).

Variability exists in the use of a three-level hierarchy of evaluation factors (i.e., areas, items, criteria). On occasion it is collapsed to two levels; in effect, items become criteria (an example may be found in Appendix B-3). Other times a two-level structure is used with some additional guidance on things to consider when making judgments. And sometimes it isn't completely clear what criteria are being used to derive ratings.

Much concern exists over the reliability of subjective ratings in the award fee method. AFSC policy guidance therefore discourages using a large number of complex elements in award fee evaluation/

measurement plans. It is regularly suggested that the number of award fee evaluation factors be held to a minimum (no more than five, according to one SAMSO policy statement). In practice, three to six areas and between six and twenty items are normal. In addition, policy often stresses the use of "output" rather than "input" standards for evaluation, and encourages using "objective" measures of output (and "historical standards"), when they are available, as a "basis for overall subjective evaluation of efficiency" (SAMSO 70-, March 1979).

Finally, in many AFSC policy statements maintenance of the integrity of the award fee evaluation system is specifically stressed in order to guarantee checks and balances that will result in fair evaluations.

Award Fee Organization. The award fee organization is ideally developed as part of an Acquisition Plan. It includes, at minimum, an FDO, (Fee Determination Official), an Award Fee Review Board (and Chairman), and a group of performance Monitors to do the initial task- (or item-) level evaluations of the contractor. (An exemplary award fee organization may be found depicted in Appendix C.) Suggestions have been made that the FDO be at least a level higher than the Program Manager, and that the level of Source Selection Authority be considered as a guide when proposing an award fee organization. It is also implied that the organization level may vary with the magnitude (fee dollars) or importance of a program, as, of course, it has historically.

Policy guidance in AFSC on the level of this organization is fairly clear: delegation of FDO authority to the Commander of the "Product Division" involved (e.g. ASD) is to be requested in all cases (cf.

AFSC/PMPS, "Guide," Dec. 77). Acquisition plans from program offices calling for award fee provisions (like any other acquisition plans) are reviewed by the USAF Directorate of Contracting and Acquisition Policy, among other things, for the level of the award fee organization--specifically, whether or not it should be at a Secretarial-level. (Preference there tends to be for a Secretarial-level award fee organization, about which more will be said later.)

In any event, in AFSC the Commander of the buying Division commonly is established as FDO. (He usually delegates the role to the Vice Commander or a Deputy.) Within the AFSC field division, the Chairman of the ARB is usually at the Deputy level; or, if the Deputy is FDO, the ARB chair will usually be the Program Manager (e.g. UPT-IFS). Generally speaking, and notwithstanding SAMTEC's standard ARB, there is a disposition throughout AFSC to hold the effective level of the award fee organization as low as possible.³⁷

In the award fee organization, the FDO, in addition to approving award fee plans and appointing ARB members, reviews ARB evaluations and recommendations regarding contractor performance. The FDO, of course, makes final awards of fee (see below) and notifies the contractor of these. The FDO (or the ARB Chairperson, on FDO authority) also authorizes release to contractors of information about interim and final evaluations (or other information).

³⁷ In Section III ("Lessons Learned") of the AFSC/PMPS "Guide," for instance, it says: "Membership of the Award Fee Evaluation Board (AFEB) and the FDO should be kept at the lowest practical level" (P. 7, item I). Other "guidance" may be found in AFSC DAR Suppl. 3-405.5 24 March 1978, and in Divisional Supplements.

The ARB is managerially the most important unit of the award fee organization. Its members are responsible for developing award fee plans for FDO approval prior to each evaluation period following the first (including reallocations of remaining fee, of which reallocations, if any, contractors must be advised in advance). They also are responsible for within-period oversight of contractor performance as well as for its period-end evaluation, of course. In these evaluations they are encouraged to consider a wide range of inputs (for the sake of impartiality as well as comprehensiveness); and, by majority vote, they may prescribe weightings for the different contractor performance factors on which evaluation (and fee) recommendations will be based.

In AFSC, Board membership normally includes a Recorder/Secretary in addition to technical, contracts and other persons (e.g. judge advocate) who are responsible for or are interested in different aspects of contractor performance on a particular program.

As mentioned, ARB membership is nominally a matter for FDO decision--perhaps on recommendation of the designated ARB chairperson or SPO Director or Program Manager (if these are different persons). But policy formulations oftentimes have the effect of largely prescribing the membership of the ARB (e.g., in SAMSO and certainly SAMTEC).

The Board may include outside "advisors" to assist in its deliberations. Certain ESD programs, for instance, include MITRE Corp. personnel as third-party technical consultants to their ARB. In any case, a Chairperson, prescribed by policy or appointed ad hoc by the FDO, presides over the ARB.

The ARB Chairperson schedules meetings of the ARB, prepares any briefings and presentations on behalf of the Board (e.g. to the FDO), issues formal letters to contractors when improvements in performance

are needed, and ensures completeness and impartiality in evaluations of contractor performance. Certain functions of the ARB Chairperson may be delegated, but it is generally expected in AFSC that briefings to the FDO (see below) will be done in person by the ARB Chair, who generally has at least some discretion in the ARB recommendations made to the FDO. The ARB Chairperson is responsible for selecting performance evaluation factors and for assigning organizations or individuals to monitor them. The functions of these Monitors will be discussed shortly, after mention of a final ARB functionary, the Recorder.

The ARB Recorder is essentially an executive secretary to the ARB. Normally a nonvoting member of the Board, the Recorder is responsible for timely coordination of Monitor input to the ARB/FDO and therefore is sometimes called a Coordinator. Recorders are also responsible for acquisition of award fee inputs from other pertinent sources (e.g. user organizations, DCAS, etc.), and for organizing briefings to the ARB. The ARB Recorder is expected to be familiar with all award fee regulations, policies, manuals, and other relevant directives or guides, and to ensure ARB compliance with them. On occasion, say in smaller programs (e.g. TACC-AUTO), the Recorder may have a direct role in supervising Monitors, devising evaluation procedures, and even communicating with the contractor. In these cases the Recorder will ordinarily hold a project management position. Finally, the Recorder is responsible for documenting ARB meetings.³⁸

³⁸ A current AFSC contract for Operation of the Arnold Engineering Development Center (no. F40600-77-C-0003) handles the "recorder function" institutionally, establishing the AEDC Directorate of Contracting as a "Secretariat" to the ARB.

Evaluation Monitors are drawn from among the government managers and project officers below the Program Manager who have direct (task-level) day-to-day oversight responsibility for contractor operations. In smaller AFSC programs certain of these monitors may also be ARB members. In the award fee organization they are assigned to monitor and evaluate contractor performance with respect to particular evaluation factors. For more complex efforts (e.g. Space Trans-Ground Support) two levels of monitors are sometimes used, one representing functional categories of contractor performance, and the other representing organizations responsible for more specific contractor activities. The latter provide periodic inputs of day-to-day contractor performance to the former who, in turn, consolidate their inputs for the Program Manager and ARB. In addition to direct observation of contractor activity, Monitors commonly receive input about specific elements of contractor performance from designated technical or other personnel "in the field" at working levels. The NAVSTAR/GPS monitoring process is a typical one. It runs this way:

- (1) as part of regular project management, Monitors receive daily "activity/status/problem" reports from the field;
- (2) the Monitors present these as a composite at weekly project meetings, where they are discussed and revised if needed;
- (3) at the end of the award fee period, Monitors provide to a Coordinator summary reports which include statements on the strengths and weaknesses of contractor performance during the period, the relative importance of those strengths and

weaknesses, and recommended percentage scores reflecting their subjective judgment of performance quality on given factors; and

- (4) the Coordinator integrates the separate Monitor reports into a summary for the Program Manager for briefing to the ARB.

Monitors are admonished to maintain informal but comprehensive and detailed records on contractor performance in their area(s) of responsibility, and to be prepared to provide the FDO, ARB Chairperson or Recorder with needed information on request.³⁹ They are also expected to work closely with and assist the Program Manager in developing contractor evaluations and briefing the ARB.

The Program Manager. A few AFSC award fee plans name the Program Manager as ARB Chairperson. Most often, however, he/she is strictly speaking not a member of the award fee organization. In either case the Program Manager plays a crucial role in the evaluation (and fee determination) process. In the first place the Program Manager has the important role of developing award fee plans, including identification of performance evaluation factors, relative weights (initially), and final specific weights; and he/she, of course, is the principal manager of those plans. He/she commonly selects and assigns evaluation Monitors and, in any case, supervises them. Regular meetings (monthly or more often) of the Monitors with the Program Manager occur to review contractor and general program performance. The Program

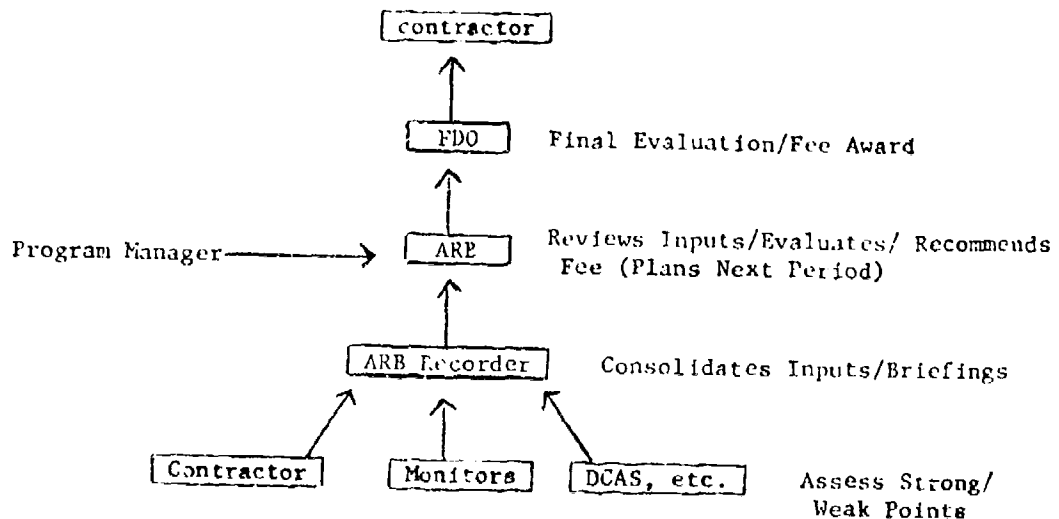
³⁹ Monitors' files are for "Official Use Only" and not for circulation.

Manager is also responsible for briefings to the ARB. Various different individuals may participate in these briefings (Monitors, Contractor, and others, in addition to or instead of the Program Manager); but it is expected that the ARB briefing first will have been dry-run with the Program Manager, and that his/her overall evaluation of contractor performance will be included in the briefing, where it receives special notice. One AFSC program award fee plan (AWACS) specifically identifies the Air Force Program Manager as the "prime source of information to the Evaluation Board" (and hence to the FDO), which is surely always true whether or not it is so expressly stated.

Award Fee Evaluation Process. The award fee evaluation process begins, of course, with task level assessments of contractor performance by Monitors. Assessments by the several Monitors are consolidated, combined with other input (e.g. from the contractor, DCAS, program manager, etc.) and presented as a briefing to the Award Review Board. The Board considers this information, together with any other which its individual members may contribute,⁴⁰ and arrives at a final evaluation of contractor performance. It uses this evaluation to generate a recommendation to the FDO of fee award (in dollars) to the contractor (see below).

The typical award fee evaluation process can be schematized as follows:

⁴⁰Collectively, this multi-form/multi-source information defines the data for contractor performance evaluation and fee determination. It is, of course, supplemented by back-up "data" in the files of Monitors and, perhaps, others.



Evaluation Monitors are assigned specific areas of contractor activity within their normal range of oversight responsibility (e.g. flight test operations). They are usually instructed to "note those instances in which the contractor's performance is considered to be more or less than satisfactory," and to document happenings which "demonstrate the contractor's day-to-day performance of the contract objectives." Careful demonstration is emphasized. Monitors are advised to "maintain an informal written record of the contractor's performance in their area/areas of responsibility." It is expected that this file will include memoranda of conversations, meetings, telephone communications and other informal material relevant to the evaluation as well as more formal items such as reports or copies of correspondence. It is further expected that the Monitors will retain these files for a reasonable period of time as a basis for justifying or explaining contractor evaluations to the Program Manager and ARB/FDO.

Monitors and program managers are expected to hold regular meetings (weekly, as advised, with written monthly "status" reports)

to review contractor performance, both generally and with regard to the award fee plan (see Appendix D for illustrative material). Occasionally, meetings of Monitors and the ARB Chairperson (if this person is not the Program Manager, which is most often the case) may be held during the award fee period (in one case, trimesterly, when the evaluation period was 12 months long) to determine any need for formal "discrepancy reports" to the contractor.

In preparing reports for the ARB (whether interim or period-end), Monitors draw upon their individual files to prepare a list of specific "strong" and "weak" points of contractor performance in the area(s) of their responsibility. They may also be encouraged to comment on areas outside their primary responsibility and to draw on other sources, too, in order "to outline a complete picture of contractor performance." It is customary that each strong and weak point be weighted for its importance. Most usual is a system of asterisks (see Appendix D) (***, **, *) signifying the Monitor's judgment of the magnitude of impact on program/project objectives (e.g. high, medium, low). Sometimes (cf. SAMSO/RS, OI 70-5, 14 Feb. 78) distinctions are made between task-level impacts (***) and program-level impacts (***)).

In addition, Monitors are normally asked to judge the extent to which the performance item for which they are responsible has been accomplished. For this purpose, each item (e.g. "subcontractor management") has associated with it a set of criteria (e.g. "vigorously monitors subcontractor cost and schedule performance," plus others). These are grouped into subsets of increasingly "demanding" standards (increasing between subsets, not necessarily within them), defining (usually) three levels of performance on the item: good, very good, and excellent, with an "unsatisfactory" category anchoring the scale. Each criterion is graded on a three-point

scale expressed as - = did not meet the criterion, ✓ = did meet the criterion, + = exceeded the criterion (plus, perhaps, 0 = not observed or inapplicable). "Substantial attainment" of all items in the "good" category must precede consideration of any items in higher-level categories (see Appendix B-1 for an illustration).⁴¹

For each item, Monitors prepare written evaluation reports (see Appendix E) and, taking into account the degree to which objectives were met and the importance of contractor strengths and weaknesses, assigns a score for the item. This score is generally a percentage grade, which is essentially a rating on a subjective 0-100% scale (e.g. 80%). To obtain it, within a category (good, very good, etc.) the number of criteria "substantially" attained, or the "degree attained" is used to estimate a percentage rating for each performance area/item and perhaps a color code to draw attention to the quality of contractor performance (see Appendix E). Sometimes this procedure may be inverted: a percentage rating is made first and the adjective rating from it found by consulting a table (see Appendix E). In such cases what have been described here as criteria tend to reduce to guidelines for ratings.

The grading systems in use throughout the AFSC vary to some considerable extent. Most often they range from "unsatisfactory" through "good" and "very good" to "excellent," but some others are (or have been) in use; for example: unsatisfactory, marginal, adequate, good, superior, satisfactory, standard, above standard, extraordinary; poor, fair, good, very good, superior; and others, too.⁴² Still more variable are the percentage

⁴¹This system seeks to establish an approximation to what psychometricians call a Guttman scale wherein ratings subsume any criteria lower in the scale.

⁴²In at least one case (Space Trans-Ground Support) where scoring was "unsatisfactory, marginal, satisfactory, good, very good, excellent," only the last three categories were used for the award fee determination.

ratings that serve as criteria defining (or defined by) the adjective ratings. For example, the following table shows the percentage criteria for assigning adjective performance ratings in four AFSC organizations.

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
excellent	91-100	86-100	61-100	86-100
very good	76-90	51-85	31-60	56-85
good	51-75	01-50	00-30	21-55
unsatisfactory	01-50	00	00	00-20

All other things equal, it is apparent from this table that the meaning (definition) of an adjective rating of contractor performance is different across these organizations.

Monitors' reports, including recommendations for changes in the Evaluation Plan, for which standard forms sometimes are provided (see Appendix E), are reviewed by the Program Manager and incorporated into a briefing package which is submitted to the ARB Recorder who collates these reports with other inputs for distribution to the ARB prior to the briefing. Some time period is usually prescribed for completion of these reports (e.g., 5-10 days from period-end), and for distribution to the ARB (24 hours in advance of briefing).

Briefings to the ARB usually are done by the Program Manager (and others he/she may name). They customarily include a synopsis of the program and contract and of the award fee plan in use. The briefing ordinarily identifies the evaluation Monitors and reviews any intra-period actions regarding contractor performance (e.g. interim evaluations). It will also include recommended weightings for evaluation areas/items. Thus, in the AFSC, ARB briefings are program status reviews as well as fee determination exercises (see Appendix G for one summary briefing

format). The briefings involve presentation of Monitors' reports, the Program Manager's appraisal of overall contractor performance, information from other government sources, and, perhaps, a physical briefing by the contractor. If the latter is not an ARB briefing event, contractor input, if any, (in some cases contractor input is by request only) will be in writing, via the PCO or Program Manager, or direct to the ARB Chairperson.

During the briefing, the ARB reviews proposed area/item weights and confirms or revises these by majority vote. It then reviews and perhaps revises (by voting) the proposed percentage grades to contractors on the evaluation areas/items and attaches appropriate color codes to them--blue or green signifying "excellent" performance, "Red" unsatisfactory performance, and so forth. The weighted percentages then are averaged or otherwise aggregated to obtain an overall color coded score (see Appendix H), and a recommended fee award. Finally, the ARB will consider and recommend any changes in the award fee plan for the next evaluation period.

The frequency of formal evaluation of contractor performance is variable, although policy guidance suggests that it not be less than quarterly.⁴³ (These evaluations may not all be for the purpose of fee determination, see below). AFSC policy guidance also recommends frequent informal review of the contractor by Monitors and the Program Manager or designee, and informal interim communication with the contractor as needed.

⁴³For the A-10 program, which involved only one award fee period, based primarily on assessment of "logistic effects" by a complex cost model, formal quarterly reviews were done of contractor performance on so-called "secondary" factors (management, etc.).

Formal progress (or "discrepancy") reports to the contractor by letter may also be issued during the evaluation period, at the discretion of the ARB Chairman. The contractor is expected to provide a timely response to any such reports, including plans for improvements in any areas needing it.

The Fee Determination Plan

Basically, award fee methodology provides for an award of fee (within contractual limits) to a contractor based on the judgment (not subject to Disputes) of the FDO. In arriving at this judgment--which is communicated to the contractor by letter and (usually) briefing by the Program Manager--the FDO is expected to review the recommendation of the ARB given in a briefing by its Chairman, the form and content of which the FDO may specify, and consider "all appropriate data." Allowance has very occasionally been made in AFSC for giving the contractor summaries of ARB award fee evaluations prior to fee determination and then allowing contractor "comments" for the benefit of the FDO. But, in the final analysis, it is the discretionary judgment of the FDO which determines the fee awarded the contractor. (Should the FDO award a fee other than that recommended by the ARB, however, he/she is expected to provide a rationale for it, with documentation, to the ARB.⁴⁴)

The magnitude of fee award is naturally variable. One view on the appropriate size of fee is that it "need only be large enough to distress contractor top management if not earned."⁴⁵ However that may be, fee is obviously a matter for careful attention in developing an overall Award

⁴⁴ Cf. Hq. AFSC/PMPS "Guide to Award Fee" Dec. 1977, p. 5.

⁴⁵ Hq. USAF/CAP "Concept Paper" 16 March 1977, p. 4.

Fee Plan. AFSC policy directives encourage that, when developing a fee (or contractor compensation) plan, consideration be given to the contractor's past performance, resources, investment, and other attributes as well as to the complexity of the task although, following DAR 3-405.5(c) 1 July 1976, DOD Weighted Guidelines are not formally used. Consistent with DAR limitations, AFSC planning practice orients to norms of an award fee of about 7% on a base fee set at 3% (base fees of 2% or even zero are not unknown, however). Normally, there are no provisions for downward adjustments of fee--i.e. the award fee plan is a reward-only system. In theory, at least, actual fee awards may equal zero, although they seldom do.⁴⁶

Air Force policy tends to be emphatic about awarding no fee for "submarginal, marginal," or even "satisfactory" contractor performance.⁴⁷ The thinking here is that the intent of the award fee is to motivate and reward only superior performance. This injunction sometimes goes unheeded, however, and in any case is qualified with respect to CPAF contracts. Because the DAR (3-405.5[d]) restrict base fee under such contracts to a maximum of 3% (and that really only to cover unallowed costs), policy suggests that the FDO sometimes award "some" fee for merely "satisfactory" performance. But, under other contractual arrangements (e.g. CPIF/AF), where award fee is additive to usual negotiated incentive

⁴⁶ The programs selected for study in this research exhibited actual fee awards ranging from 0 to 100%. Their unweighted mean was about 66%, and their mean weighted by program, to accommodate differences in the number of awards, was about 72%. Program-specific mean awards ranged from a low of 48% to a high of 93%. Program-specific mean awards were mostly in the mid-70s.

⁴⁷ ASFR 3-405.5(1) 1 July 1976 caused some confusion on this point by seeming to authorize fee for submarginal performance; see AFSC ASFR Suppl. 3-405.5 24 March 1978 and AFSC/PMP Letter 8/17/77 clarifying the point.

fees, the general AFSC policy is: "To merit award fee, the contractor must exceed normally expected performance for those areas to which the award fee applies."⁴⁸

Except to say, for instance, that fee should be determined "at a point in time late enough in contract performance so as to be based upon performance, but early enough to influence remaining performance,"⁴⁹ Air Force policy is essentially silent on the question of number and duration of award fee periods, although a milestone basis for structuring them is common and widely endorsed (see Appendix H for an example).⁵⁰ Policy is likewise silent on the subject of allocating the award fee over evaluation periods, except to say that generally there should be no rolling forward of unearned fee from one period to the next.⁵¹ Award fee plans do exist which allow fee to be carried forward (e.g. TACC-Auto Contract No. F19628-74-C-0033); and fee adjustments are, of course, common if certain program milestones do not occur, thereby precluding evaluation.

⁴⁸UPT-IFS, however, provides for fee award up to 50% for no better than the "standard" performance. And a recent draft SAMTEC Operation Instruction, following DAR AFSC Suppl. 3-405.5 24 March 1978, provides that submarginal performance in certain areas does not necessarily preclude fee if overall "total weighted rating is 'good' or higher;" although no points toward fee are awarded for submarginal performance.

⁴⁹USAF/CAP "Concept Paper" 16 March 1977, p. 4.

⁵⁰It is worth noting again that the frequency of contractor evaluation and of fee determination need not be the same. Award fee determination periods may encompass multiple intra-period contractor evaluations, and they usually do.

⁵¹Cf. AFSC/PMPS "Guide." DAR 3-405.5 is mute on this point. AFSC DAR Suppl. 3-405.5(d,2) 24 March 1978 observes that, although not prohibited by regulations, "the Air Force has generally opted in favor of an award fee provision which does not carry-forward unearned fee for possible award in subsequent evaluation periods." It goes on to say, however, that occasions may arise when a carry-forward provision would be effective "as an incentive for an extraordinary action or performance by the contractor."

No specific AFSC norm on allocation of fee by period exists nor, probably, can one; but a general AFSC policy-by-practice appears to exist in a custom of allocating relatively larger fractions of the award fee to later periods than to earlier ones. This is not a universal custom and cases can be found where fee has been "front-end loaded."

In more particular matters of the timing of awards, heavy emphases is put on timeliness of evaluation and award in order to "maintain the award fee incentive."⁵² AFSC policy commonly recommends completion of evaluations within three weeks of a milestone or other period-end marker, and fee awards within four to six weeks, with appropriate contract modification (to reflect fee awarded) within, say, 30 days thereafter.

A contractor may invoice for base fee, if any is provided, on a monthly or more frequent basis. In addition, DAR 3-405.5(e) 1 July 1976 appears to allow periodic partial payment of the award fee, possibly based on anticipations of likely FDO award derived from interim performance evaluations. No AFSC contract with this arrangement was observed, but it does not appear to be proscribed by either regulation or formal policy and some other government organizations have done it.

Summary

Empirically, patterns of award fee applications in the AFSC generally stay within traditional bounds. Undertaken from a perspective stressing contractor compensation more than program management, award fee is mostly viewed simply as an alternative contract-type, intermediate between CPIF and CPFF.

⁵²USAF/CAP "Concept Paper" 16 March 1977.

Evaluation plans, while variable in detail, commonly identify two or three levels of performance factors on which to base contractor evaluation. Factors normally are weighted for importance and orient to output rather than input (or process). Concern about subjectivity in award fee evaluation regularly stimulates attempts at "objectification" of evaluation standards and procedures.

AFSC policy seeks to establish award fee organization "at the lowest practical level." Unless otherwise mandated by higher Air Force authority, typically an officer below the commander of the Air Force buying Division will act as Fee Determining Official (FDO). Award Review Boards (ARB) are likely to be chaired by a Deputy for a buying organization within the Division or by a SPO Director, Program Manager, or other comparable officer, depending on circumstances. Some tendency to standardize award fee organization exists, but variability continues. Standardized or not the ARB is managerially the most important unit of the AFSC award fee organization. It plans, conducts, and manages contractor performance evaluations, and recommends fee awards to the FDO. In doing so, an ARB ordinarily makes use of project officers as monitors and evaluators of task-level contractor/performance, and a "recorder" to coordinate and document these processes.

The government Program Manager (PM) may be, but often is not, a literal member of the award fee organization. In any case, he or she plays a principal role in award fee planning, evaluation, and fee determination, as well as in overall program control. He or she normally selects, assigns and supervises monitors, and the PM's briefings and recommendations usually are decisive in the outcomes of deliberations by the ARB and FDO.

A typical award fee evaluation uses information from various government managers and agencies, and from the contractor. Contractor input, if any, may be a physical briefing to the ARB, or in writing, or both. Contractor input to the ARB/FDO may be via direct formal self-evaluation and/or briefing, or indirect, via the PM.

Grading systems for contractor performance evaluation vary considerably throughout the AFSC. Mostly they involve adjective ratings with correlated percentage ratings and color codes. The correspondence of adjectives and percentage ratings is no more than approximate across AFSC organizations, however, so that the meaning of "grades" there is variable.

The AFSC strives for at least quarterly award fee evaluations. Fee determining evaluations may be more widely spaced, however, and often coincide with milestone achievement.

Fee awards have been variable in AFSC programs, ranging from 0-100%, (usually additive to a two or three percent base fee). AFSC policy emphasizes payment of fee only for superior performance, but policy is not always followed. Policy also counsels against carrying unearned fee over for possible award in later periods; and it encourages allocating larger fractions of the award fee pool to later rather than earlier periods.

Primary Documentary Data Sources--AFSC Award Fee Plans

ASD

A-10 (Fairchild) (F33657-73-C-0500)
A-10 (General Electric) (F33657-73-C-0222)
UPT-IFS (American Airlines-Singer/Link) (not recorded)
F-16 Sim. (Singer/Link) (not recorded)

ESD

E3A/AWACS (Boeing) (F19628-70-C-0218)
TIPI/MAGIS-SIC (General Electric) (F19628-78-C-0004)
TACC-Auto (Computer Science) (F19628-74-C-0033)
TACC-Auto (General Dynamics) (F19628-73-C-0071)

SAMSO

AMARV (McDonnell-Douglas) (F04701-76-C-0100)
ABRV (AVCO) (F04701-77-C-0001)
NAVSTAR-GPS (Rockwell) (F04701-74-C-0327)
NAVSTAR-GPS (General Dynamics) (F04701-75-C-0001)
STS-PIC (Martin) (F04701-77-C-0183)
STS-Grnd Sup (Martin) (F04701-76-C-0081)

SAMTEC

Op. Test Ctr, VAFB (Federal Electric) (F04703-77-C-0111)

IV.

AWARD FEE CONTRACTING

A COMMENTARY

This chapter is a discussion and critique of award fee contracting applications and related policies and practices, in general and specifically in the Air Force Systems Command. Together with the AFSC Award Fee Scenario in Chapter III, which was presented without commentary, its purpose is to portray Air Force award fee practices against a backdrop of policy and the individually expressed attitudes and viewpoints of Air Force personnel from Headquarters to program levels. It considers these Air Force practices, policies, and viewpoints in relation to alternative practices elsewhere in the federal establishment, and in relation to the published literature. The goals of the discussion are three: (1) to illuminate choices made and foregone in Air Force award fee applications; (2) to highlight some basic issues of award fee policy and implementation to which these choices point; and (3) to identify lessons for future Air Force research and practice.

In addition to numerous interviews with Air Force civilians and military officers at virtually all levels, discussions of award fee contracting, and acquisition policy generally, were held with representatives of other military departments, federal agencies such as NASA and DOE, and informed individuals outside of government. Many relevant documents were reviewed, as was the published literature; and a videotaped presentation of his "initiatives" by Lt. Gen. A.D. Slay was viewed.

The commentary ranges over essentially the same themes as are presented in Chapter III. It begins with discussion of award fee planning, goes on to review some problems in the evaluation process, touches on certain questions in fee determination, includes discussion of general

concepts and issues of acquisition strategy, and ends with conclusions in the form mainly of statements of needs for future Air Force research and award fee practice.

The Award Fee Evaluation Plan

Should The Award Fee Plan Be Negotiated? It has been suggested that award fee plans be included in RFP's and also that their details be subject to proposals by contractors and subsequent contract negotiation. The sampling of AFSC programs used for this study revealed no evidence of such practices nor any interest in trying the procedure. The practice is not without precedent elsewhere, however.

A model "follow ship" RFP, designed for a CPAF contract and prepared for the Office of Naval Research by the Adtech Corp. (1979), describes a preliminary award fee plan in considerable detail and solicits contractor proposals for both the award fee evaluation plan and for fee allocations over evaluation periods. NASA's Viking program did essentially these same things. In a CPAF/IF (Cost-Plus Award Fee/Incentive Fee) context, it invited offerers to propose alternative "incentive plans" although, as a condition of acceptance of their responses, they were required to agree to the one stated in considerable detail in the RFP. The NASA plan for this acquisition also provided for contractor proposals on fee allocation and changes in the plan during the life of the contract. A recent AFLC contract (F09603-77-A-0591) with Hayes International largely based award fee administration on a management plan developed by the contractor. (The evaluation plan for rating contractor performance was developed by the Air Force, however.)⁵³

⁵³ This contract was also unusual in that the PCO served as fee determining official.

The award fee contracting Guide recently produced by the Department of Energy (1978) encourages inclusion of preliminary "award fee determination plans" in RFP's. It, too, counsels that bidders be solicited for proposals on the details of these plans, and that the proposals be considered in source selection as well as in writing initial award fee plans.⁵⁴

AFSC practice appears to be quite different from this. RFPs note that an award fee provision will be part of the contract compensation structure; but they rarely, if ever, present a fully developed award fee plan, or include such as a subject for negotiation. Ordinarily the contractor is given the plan, on a take it or leave it basis, subsequent to the contract award. In a J-model environment, however, where planning and performance are collaborative undertakings, receiving contractor proposals for an award fee plan, and negotiating on them may be a worthwhile practice. Solicitation of contractor input regarding changes in award fee plans from one award fee period to another is often successfully done, for instance.

Should Award Fee Plans Be Incorporated in Contracts? A question loosely related to the one just considered is whether or not to incorporate award fee plans in a contract, per se. There are strong arguments, it would seem, against including award fee plans in contracts where they would be constrained from changing, thereby defeating their flexibility. Instead, the award fee plan can simply be referenced in the contract (cf. the DOE CPAF Contracting Guide, 1978, for a discussion of the advantages of this strategy). At the same time, there is no obvious reason why a provisional

⁵⁴The DOE Guide has obviously been influenced heavily by long-standing NASA policies and practices.

plan cannot be developed by the buying organization and proposals for it solicited from the contractor in the RFP, as was just described. The final plan might then incorporate contractor ideas without itself being either negotiated or formally contractual, and without compromising the government's right to unilateral determination of the bases or methods by which it will evaluate contractor performance and determine fee.

Simplicity in Award Fee Plans. Most policy and procedural guidance on award fee contracting advises that the evaluation plans on which they rest be simple and clear. In practice, however, many evaluation plans are neither. We noted that a draft SAMSO award fee guide (1979) suggests that, in the interest, of simplicity, the number of award fee evaluation factors, for example, should number no more than five. Limiting the number of evaluation factors and measurement elements, and confining them to important ones is sound advice. It assists both the comprehension and control of the evaluation process thus helping to assure the effectiveness of assessment. But ironically, the same SAMSO Guide includes illustrative Attachments I through VIII which, in direct violation of its own earlier injunction to limit their number of "about five," describes eight evaluation factors.

In some cases, too, the number of evaluation criteria is probably too great. In one instance, in order to receive a grade of "excellent" on "Test Program Management," for example, a contractor must be evaluated on no fewer the 12 critieria, plus the 17 criteria applicable for lower grades. Undoubtedly there are instances (this may or may not be one) when a rather large number of factors and/or criteria may be desirable and also manageable; but the justification for it should always be compelling in order not to defeat the aspiration for simplicity and its companion, clarity, in award fee planning.

Unfortunately, many, probably most, Air Force award fee evaluation plans are over-elaborated. As a result, they are hard to understand and administer. This complexity gives the dog a bad name, as it were, needlessly increasing award fee administrative burdens, causing uncertainty about the fairness of its outcomes, and generally vitiating its value as a management tool. Useful advice on this point is to be found in the DOE 1978 Guide which observes simply that not all functions in a statement of work need necessarily be incentivized.

Tendencies to over-do evaluation plans are by no means confined to the Air Force (cf. Ulrich, 1975, and Carter, 1977, for a discussion of some Army misdemeanors). However much simplification is advocated, as, for example, by the Commission on Federal Procurement (1972), one nevertheless finds evidence everywhere of tendencies toward complexity. It would seem that as a way of avoiding the troubling but essential subjectivity of award fee judgments, reluctant users of the method elaborate complex pseudo-rigorous evaluation schemes which give them the comforting appearance of at least trying to be objective.

The Subjectivity of Award Fee Evaluation. Definitions of evaluation factors and the allocation of criteria to evaluation levels (good, very good, etc.) in the award fee procedure are necessarily heavily subjective. What, for instance, can be the rationale which specifies "maintains complete and comprehensive discrepancy tracking system and provides accessibility to the government" as a criterion to be met for a "very good" rating? and "carefully reviews and edits all test procedures for both subcontract and in-house tests" as a condition to be satisfied for an "excellent" rating? Doubtless there is a rationale, and probably a good one. The point is, however, that it is necessarily and properly judgmental--subjective.

Evaluation criteria such as "minimum usage of non-standard parts" (emphasis added) obviously open wide a possibility of debate based on overlapping distributions of individual judgments about "facts" of compliance-noncompliance on the same aspect of contractor performance which depend, in turn, upon the implicit personal norms held by individual evaluators. As with all evaluation factors, obviously, the issue here is one of definition. What is "minimum" or "adequate" or "comprehensive" or "effective" or "generally satisfies?" Other questions arise, too: how much must reliability "increase with time" in order for it to be considered worthy of an "excellent" grade? (Probably more for the government than for the contractor.) If a definition of "subjectivity" is needed these examples will serve.

The important point to take from this discussion is that procedural complexity by itself is no cure for subjectivity; indeed, it only aggravates the problematic properties of subjective judgment by making it more complicated and harder to understand. The basic award fee evaluation system typical of AFSC and any place else is thoroughly subjective-- in its standards and in its organization. Some of this subjectivity can perhaps be removed, either by definition or by improved measurement; but mostly it probably is either infeasible, given the state of the art, or not worth the cost. Some techniques exist which might help reduce vagueness in the evaluation process, but they would not alter its basically subjective nature. For example, arbitrarily (or by negotiation) setting a threshold quantity to define "minimum single point failures" could do this, and might or might not be helpful, but it would not make the evaluation any less subjective.

The award fee method frankly finesses questions such as this (i.e.,

what "a minimum" really is) by allowing judgment instead of specification. If this were not done, clearly it would be hard to get on with the job. Acquisition planners would become mired in scholastic definitional arguments. Still, it is plainly important that evaluation criteria and procedures be as well-specified as the state of the art permits, and the acquisition requires. Recourse to vague standards and methods cannot be justified simply because it may be easier.⁵⁵

Output vs. Input Standards For Award Fee Evaluation. Stress on "output" rather than "input" standards for award fee evaluations is a further expression of aspirations to avoid subjectivity in evaluating contractor performance. It is a common sentiment in the AFSC where it seems to reflect a broader results-oriented management philosophy and a commendable disposition to avoid "micro-management" of the contractor. Oftentimes in environments suitable to use of the award fee, however, only input (management) standards are available or sensible.

Furthermore, a potential difficulty with results-oriented management strategies may be illustrated. In one award fee evaluation plan, for instance, under the factor "Systems Effectiveness," a criterion was stated (for "good" performance) which read: "accident-free operation due to safe working conditions." Plainly the intention here is to take account not only of the outcomes of the contractor's actions, but also the processes by which they were produced. Credit is to be given to the contractor because he did something to bring about the result, not simply

⁵⁵The DAR, in fact, expressly enjoins use of the award fee as either a gambit to avoid using CPFF or to avoid the effort of specification (3-405.5[g] 1 July 1976).

because the result happened. This idea needs to be kept in mind during evaluation. Given award fee presumptions of joint program management, it is essential that visibility of method be maintained by government as well as by contractor managers.

Antagonism toward input standards for contractor evaluations seems to be rather less in some other government agencies than it is in the Air Force (see, for example, both the NASA Award Fee Guide, 1967, and the DOE Guide, 1978). The important point, however, as one astute observer of the award fee evaluation process put it, "is not whether criteria relate to outputs or inputs, but whether those selected permit a timely evaluation of total impact of contractor performance and use as small a number of parameters as possible."

A General Note on Award Fee Planning. The planning and review objectives associated with DOD implementation of OMB Circular A-109 currently promote emphasis on early and thorough acquisition planning and prescribe certain approval procedures to which it is subject. DOD Directives 5000.1 and 5000.2 establish a comprehensive policy and implementation framework for mission-oriented acquisition planning, review, and control--the Defense System Acquisition Review Council (DSARC)--which heavily influences the environment of award fee application.

Award fee theory and DOD Directives 5000.1 and 5000.2 are in harmony on most basic points. The DOD Directives recognize the uniqueness of individual major system acquisitions and the need for flexibility in their management; and they highlight the critical role of the human program manager in successful system acquisition. DOD Directive 5000.1, for instance states that:

"Successful management of system acquisition depends upon competent people...and recognition that programs are different and require management flexibility. Responsibility for the management of system acquisition programs should be decentralized to the DOD Components except for decisions retained by the Secretary of Defense" (DOD Directive 5000.1, 18 Jan. 1977, p. 4).

Directive 5000.2 continues this theme by stressing the importance of "a strong system program office" and the vital role of the program manager as problem-solver. (This managerialist attitude, directed alike to contractor and government organizations, continues in DOD Instruction 7000.2 regarding cost/schedule control systems.)

Emphasis on planning generally and timely development of award fee plans has long been prominent in policy statements on the subject--although less so, interestingly, in Air Force than in, say, NASA and DOE statements (e.g. NASA, Cost Plus Award Fee Contracting Guide, 1967; DOE, Cost-Plus-Award-Fee Contracting, 1978). In fact, there is surprisingly little evidence of genuine planning in AFSC award fee programs.

The Commander of the AFSC, Lt. Gen. Alton D. Slay, however, lays heavy stress on planning in the acquisition process. He urges this in hopes that via the instrument of planning the Air Force may at last adopt a "proactive" stance, instead of always frantically reacting to unforeseen exigencies in its programs. One is hard put to argue against such a position, obviously. That acquisition award fee plans should be "well thought out" is a procurement cliché. We know, of course, that often they are not. General Slay wishes to change that, and to change it drastically.

It is difficult to plan, however, first of all because of limited human rationality, and secondly because environmental uncertainty adds mightily to the difficulties. Nor are technical uncertainties the only or always even the most important ones. Eddies and shifting currents of the political waters of acquisition also show scant respect for plans or planning. Truncating contract definition on the F-16 in response to potential NATO competition illustrates the subordination of planning to political circumstance.

The fact that "blue suits come and go" similarly destabilizes the environment for planning, especially when they come and go so often.⁵⁶ The necessarily tentative character of policy that results from regular command-level turnover adds greatly to the difficulty of planning as well as of policy implementation, which I suppose is essentially the same problem. Commanders trooping across the stage in rapid succession, each with a different message, almost surely stimulates elaboration at subordinate levels of stratagems for buffering operational norms against the vagaries of their policies and planning. The "system" thus becomes unresponsive to policy change of any scope, and intractable to command--whether it appears so or not.

The moral of the story, then, is that award fee plans, like any other management plans, need to be viewed as formative--tentative, partial, approximate, dynamic--in short, as eminently amendable. They are useful mainly for near-term guidance where uncertainty is no more than modest. The important thing is not to set plans in concrete or allow planning to displace active management. The essentials of effective program

⁵⁶ This same turnover, it may be noted, and the patterns of interests it exacerbates, presents a severe impediment to serious attempts at costs of ownership emphases in acquisition plans for time periods other than the briefest.

management are recognizing, analyzing, and managing (solving ?) problems associated with the achievement of missions. They do not consist of the mere implementation of predetermined plans.

Award fee planning, like any other, entails forecasts of the future and, hence, many assumptions about states of the world that may be wrong. Still, it is a useful management activity which encourages reflection on what one is about. But the wise manager is skeptical of the plans he produces, and is ready to change them as experience advises it. In fact, if he is a truly wise man, he searches his experience for evidence which disconfirms his plans so he can change them. Award fee plans are no different from others. It is a signal responsibility of the award fee organization, in fact, to test its plans and, as they need it, revise them. This testing process is the critical one which is facilitated by the communication so regularly advertised as a benefit of award fee methodology. Communication, for its own sake, I have suggested, is not the point of the award fee--effective management is the point.

A manager of one medium-size AFSC program highlighted well the problems of long-range planning. Speaking of award fee plans which set fee awards "too far out in the future," he pointed out that the contractor as a result is not "driven by the award fee," but by the "immediate pain" of getting program results. The problem, notice, is that the sources of the pain are variable, day-to-day. That they will occur one certainly can plan on in the sense of anticipating the likelihood of the unanticipated events to which the well-known "Murphy's Law" directs attention. Forecasting the nature, timing, and especially the modes of solution of these unknowns, except in general ways, or in the short-run, is seldom successful. Plans and formulae can therefore be threats to

effective management when the environment is inherently ambiguous.⁵⁷

Obviously none of this should be read as dismissing the value of planning disciplines. I want to make that clear. What it says is this: planning is properly considered a continuing not a one-time process. More than anything planning, award fee like any other, needs to be "effectively reactive"--responsive to change and new intelligence. Rigid adherence to The Plan we all recognize as counterproductive. By the same token, the world cannot be made more rational or comprehensible by admonishing managers to become proactive. If one means by that, however, that managers should be careful and pay attention to what they're doing, that's different: they can, and they should. But perhaps it is better to talk explicitly about doing that than it is to dwell on the over-sold magic of planning--strategic varieties especially. Plans are not often followed in any case--testimony on that point by working-level officers is plain. Possibly it is best that it is so.

Award Fee Evaluation Processes

Grading Contractor Performance. At the heart of the award fee process are systems for observing and "grading" contractor performance. I have already mentioned some issues having to do with selecting the features of contractor performance that will be targets for evaluation (i.e. the evaluation "factors"); and a rule of thumb was offered--keep it simple. Unfortunately this rule, we've seen, is widely violated.

Overblown attempts at quantifying the unquantifiable, fragmenting evaluation factors to allow "detailed analysis" of performance, pre-

⁵⁷ There is a kind of contrary analogue to "Murphy's Law" which is especially mischievous in equivocal environments. It might be called "Pangloss' Law," after the inveterate optimist in Voltaire's Candide. It says, "Anything that can go wrong, won't." Closely related to Pangloss' Law is the "Lawyer's Fantasy"--that contracts (plans) are the direct determiners of performance.

determining factor weights which then impede flexibility in evaluating program impact, and too much force-fitting of plans to standard evaluation formulae abound in award fee applications.⁵⁸ Consequently it is hard to avoid the conclusions of one seasoned policy-level observer of award fee practices to the effect that "lower-level personnel resist being judgmental and broad brush," and that this is an outright expression of the classic "cover your ass" syndrome. Happiness is replacing judgment with elegant predetermined (and approved) mechanical formulae of great detail and seeming quantitative rigor, decorated with adjectives and criteria and percentage ratings and weightings and equations and color codes and various bells and whistles. If no one understands the system, so much the better. Besides, if it is complex enough, it will be self-correcting (albeit indiscriminating as a result) and conducive to a pleasant, if artificial, stability.

Now, evaluation factors, obviously, are derived from a statement of work. Some "considerations" in their selection are noted in the 1978 DOE award fee Guide; and the 1967 NASA Guide recommends supplementary review of the contractor's historical and project history to identify problem and improvement areas which might be appropriate to "incentivize." Whatever factors are selected, however, and by whatever means they are selected, the first consideration (after the criterion that they be important) is that they clearly indicate to both contractor and government managers the features of contractor behavior that are to be evaluated.

⁵⁸ I would emphasize that I do not wish to imply an absolute indictment of standardization. Far from it. A standard format for developing award fee plans is doubtless helpful and reduces errors of omission. My complaint is with dispositions toward endowing standard operating procedures with a special grace and insisting on them where discretion is more to the point.

Straightforward declarative propositions about the features of contractor performance that will be of interest to the award fee organization are therefore ideal. Furthermore, it normally is best if these features-of-interest are limited to a few important ones. As one NASA policy statement has straightforwardly put it: "Fragmentation of the award fee pool over a number of meaningless events or criteria dilutes emphasis."⁵⁹

In their award fee contracting guides and other statements both NASA and DOE have outlined a "quality review" process for judging contractor performance on any factors or subfactors that may have been chosen. This (unevaluated) procedure envisages translation of evaluation factors into "goal statements" which can be judged as having been met or not by the contractor. A questionnaire for self-administration by evaluators may be developed requiring "yes" or "no" answers to a succession of goal statements. A high proportion of "yes" answers may indicate effective performance. Where augmented by an assessment of existing conditions of performance, this quality review approach can provide a comprehensive basis for evaluating contractor performance.

There is a danger in this of encouraging overelaboration of award fee evaluation processes (and "dilution of emphasis"), in addition to which the quality review approach confronts a further albeit not necessarily insurmountable difficulty. The award fee is intended for use specifically in situations where statements of work are necessarily imprecise. Equivocal work statements hardly qualify as groundings for clear declarative goal statements. Hence, in these environments evalua-

⁵⁹ Carter (1977) also discusses "averaging effects" of aggregating factor scores that impair their discriminative validity by pulling "very high and very low scores towards the middle" (p. 19).

tion factors will tend to be underspecified. The more this is true, the more "communication" there will need to be during performance in order to remove equivocality in the SOW and in the associated award fee evaluation factors. Plan on it.

A central objective of the program and award fee organizations, then, is to progressively revise, clarify, and specify statements of work and award fee plans alike.⁶⁰ Evaluation goal statements, instead of orienting to poorly specified program end-states, will, then, do better to emphasize near-term performance outcomes, and, especially in the beginning, management performance that contributes to specification of the SOW.

Grading Practices. The same simplicity/clarity rule of thumb invoked for selecting evaluation factors applies as well to "grading" contractor performance on whatever simple or complicated factors have been selected. If anything, it is harder to evaluate actual government compliance with the simplicity rule in this application than it is as regards factor selection, because grading practices, at least in the AFSC, tend to be notably vague, even hit-or-miss.

By "grading systems" I mean the rules and methods for translating simple observations of contractor performance into numerical scores or

⁶⁰ Evaluation systems do frequently change during a program, sometimes actually toward greater simplicity. The A-10 grading system, for example, evolved from a "fine" 0-100 scale to a "coarse" S/U scale, which was perceived to be "more satisfactory." But other times they evolve in a reverse direction. When they do, like any other complicated plan, they run the risks of not being understood as well as risks of not being implemented, especially at monitor-levels. "The guys doing the evaluations are busy," one project officer noted in this connection, "sometimes they let them slip," which both illustrates nonimplementation of plans and argues for simplicity of procedure.

adjectival ratings, which may then help decide magnitudes of fee award. In the AFSC, and probably elsewhere, these methods are not only variable, but inexplicit sometimes to the point of being opaque, to their users as well as to the observer.

One PCO, for instance, describing the award fee evaluation plan for his program, was forced to confess that he didn't understand its details. He went on to say that "only a couple of people know how the scoring system operated," then added, "and we have a hard time holding onto the people who know how to make the computations." An interesting situation which is by no means unique.

The AFSC, for whatever reasons, seems to have been less self-conscious about the "grading issue" than some other government organizations. In contrast to its tendencies to organizational and procedural standardization (discussed below), the Systems Command appears to have given scant attention to disciplines of grading, apart, that is, from devising computational rules for use after basic grading has been done. Take, for instance, the matter of "reference standards" in grading. The DOE Guide, for example, adopting NASA practice, describes a system of "anchoring" grades with reference to a "performance level for any competent contractor." It defines this level as a "median" equal to 80 points (or percent). "Above standard" is then defined as the range from 81-100 points; 61-79 is "below standard" (but not "unacceptable" to the point of threatening termination, say, which is 60 points or less).

This grading system, which has correlated symbolic letter grades instead of adjectives (i.e. 86-95 points = B), can be applied to individual evaluation factors and, like others, aggregated (and weighted) to yield

"total" scores. It comes with a table for converting points into fee such that 80 points earns 50% of available fee, 100 points gets all of it, and 60 points none of it. The system will be recognized as a "standard performer" approach⁶¹ to defining a zero point (between "good" and "poor") for grading performance.

The Army Missile Readiness Command uses a similar system, but there are others which are or have been in use. NASA/MSC (Manned Spacecraft Center) and, apparently, the Army Munitions Command, for example, have used a "delta" system of grading support service contractors. In this system, the contractor's own previous performance is used to define a "standard." Changes from that standard then provide the basis for grading. Specifically, the evaluation of contractor performance in a given period is accepted as "valid." Performance changes for the next period then are defined and evaluated. Finally, the previous level of performance plus present-period changes in performance establishes a new standard for next-period evaluation.

The point of this discussion is not advocacy of particular grading methods, but just that different systems of grading contractor performance exist. In some cases, however, an attempt has been made to make a system visible, which is probably good, because some system will inevitably be used whether or not it is specified, and it is probably better to know what it is than not to know. At the same time there is nothing inherently

⁶¹ This particular approach happens to provide for payments of award fee for less than "standard" performance. It could, of course, be structured differently.

wrong with using, as in the AFSC, different grading standards or systems as between programs or between evaluation periods within programs.

Where problems may arise is when different grading systems are in use as between different evaluators within programs during the same evaluation period. Obviously this means noncomparable grades for contractors, based on different metrics, with the prospect that total scores arrived at by aggregation of factor scores amount to adding fruits and fritters.⁶²

It is fair to say, I think, that the subject of award fee grading methods richly warrants some research, probably directed to making explicit the implicit grading systems now in use in the AFSC and elsewhere.

Further Problems of Award Fee Evaluation and Reactions to It. A range of other problems arise in award fee evaluation. Among them is the issue of grade inflation.

An explicit or implicit delta method of evaluation, in which evaluation baselines are changed from one performance period to the next, usually by evaluating performance in each succeeding period against a baseline of the preceeding evaluation, is sometimes thought to force artificial grade inflation. A delta method does not necessarily foreordain continuous growth of grades, however. Grades can, theoretically, go up or down against a previous-period baseline, just as against any other;

⁶² It is worth noting here that, in what may have been the first empirical study of award fee contracting (in the DOD and NASA), Egan, working in 1966 under auspices of the Navy Special Projects Office, recommended that "reporting systems be established which stress narrative reports from field evaluators rather than ratings on a numerical scale."

but since there are general expectations of performance improvement there is a risk of self-fulfilling prophecy. Some observers, who are otherwise enthusiastic about the potential of award fee as an approach to acquisition, dislike the idea of shifting baselines from period to period for this reason. One of these observers saw the grade inflation "problem" as a more general one, however, observing that "we must be dealing with a super-normal group of engineers" because "all the adjectives are superlative." He took from this the conclusion that "something must be wrong with the evaluation system." Part of the problem of grade inflation he attributed (in this case of service contracting) to the contractor "telling where he performed." He also suggested that probably it just was easier to rate high than to "explain why they aren't." In any case, he doubted that, "in the real world," it was genuinely possible to get the performance growth seen in most award fee evaluations.⁶³

The solution to this and other problems like it, this informant, along with others, judged to be better training: "It takes thorough understanding of what the [award fee] system is---from the first level on." He dismissed the idea, however, that government evaluators perceived their evaluations as self-evaluations. At any rate, he didn't believe they were "inflating their egos." (The fact remains, however, that whether or not evaluators

⁶³ A recent careful study of DARCOM award fee contracts found no evidence of this kind of monotonic performance growth (Carter, 1977). Instead, individual awards fluctuated over a considerable range and generally behaved "as if free of constraint," thus permitting the conclusion that they well-reflected contractor performance.

perceive themselves as evaluating themselves along with the contractor, in a sense, they are nevertheless doing it).

Fairness of evaluation is a continuing refrain in discussions with award fee users. One award fee pioneer, for example, argued that the method depended for its success on the evaluator being acceptable to both parties. Otherwise trust and credibility would be lacking, he thought, and the evaluation merely a cause for contention. How best to guarantee this trust and credibility is one horn of a dilemma, discussed below, of whether to set award fee determination at high levels, where officials are presumably free of self-interest and possessed of a view of the "big picture," or at lower levels, where "people know what's happening."

Cognizant of these issues, the director of a fairly large Air Force SPO spoke of what he viewed as an ubiquitous trend toward incremental growth of award fee grades. (Fluctuating grades, he believed, would more likely express true performance variation.) He attributed this to "anchoring effects" brought about by program managers, who hold a "bigger picture," adjusting upward monitor evaluations they consider too severe. Whether or not, or in exactly what sense, this is a problem isn't really clear. Carter (1977) and a 1976 study by the NASA Procurement Management Division both found progressive full-term upward trends for fee awards, but in a context of strong period-to-period variation, a pattern which is fully in keeping with expectations from award fee theory. Nevertheless the phenomenon described by this official does show how program officials seek to compensate for an award fee scheme which fails an overall "validity"

test and which threatens inequitable treatment of a contractor. Indeed, such equity-seeking adjustments may not be so much a problem as a virtue of award fee procedure.

Award Review Boards do the same thing. It is not uncommon for them, apparently, after seeing a "final" grade, to go back and change factor weights to yield a "fairer" grade, or to adjust grades to protect contractor managers who might be unjustly fired if grades fall below, say, 75. Weighting and grading are, after all, subjective matters of trial and error. In the end about all that can be asked of them is that they be simple, reasonable and fair.

The Meanings of Award Fee Grades. Like school grades, award fee "scores" have meanings (pass-fail, etc.) which vary somewhat with observers and which affect their responses to them. Some contractors are very sensitive to award fee scores, others seem to be less so. But, one way or another, all of them take them into account; and some have their "magical numbers." Contractors use government award fee evaluations as "report cards" on their own project managers. For one large contractor, if a score isn't over 70, "watch out." (Note that it is scores not fees which are at issue here because the effects of grades "aren't all economics;" there are questions of business and professional pride involved.)

The effective range of award fee evaluation scores rarely is the nominal range (cf. Carter, 1977). Instead of 0-100, it may instead be 50- or 75-100. As one program manager said, "whenever the contractor got a low grade, he sent a team of guys to find out why." Another observed that, on his program, "a score of 50 might get three levels of management

fired." Consequently, he won't give grades under 70, as a matter of equity.⁶⁴ (Other managers, it may be noted, perceive the award fee grade as a powerful and convenient, if indirect, lever for accomplishing changes in contractor management.)

Meanings of grades, as I've said, vary some over different contractors: for one 85% = A; for another 80% = C. Nevertheless a fairly general norm seems to exist on the interpretation of award fee "report cards," at least in the AFSC. One project officer put it well: "70 = low, 80 = ok, 90 = really good." Often, however, the "word picture" doesn't fit that, as we have seen. Plainly a simple system is needed to which all can relate.

Color codes for performance levels were introduced partly to get away from the connotations of numbers; but they have their own problems. Aside from such "major" questions as whether "Air Force Blue" or "Army Green" should signify "Excellent" performance, there are some others, such as the common reactions to "red" as indicative of "disaster." The problem here is one of eliciting over-reactions because of the conventional connotations of color. On occasion, too, color codes, such as good = red, or red = 50% on a 0-100 scale are confusing as well as stimulative of

⁶⁴ This perception appears to accord with Air Force contractor rules of thumb which rather generally "define" 70% as a "fair" return and anything over 75% as good. NASA contractors, however, (and some other individual firms) I suspect have higher expectations. The matter of standards for judging award fee outcomes is just not very well specified. It deserves attention because it is more than a merely "technical" issue. Egan (1968) suggested that the award fee "motivates" by providing "a record of evaluated performance" and because of uncertainty about the consequences of that record." The report card and its interpretation, from this point of view, then, is basic to the award fee process.

over-reaction--maybe stimulative because they are confusing. To deal with this problem, and others like it, one contractor has developed a dictionary for translating government terminology into its own language.

Standardizing Award Fee Procedures. One way of making grading systems explicit is by standardizing and formalizing the evaluation process and the system of symbols used to express its outcomes. This is a problematic undertaking, however, as traditional award fee statements have recognized (cf. NASA's 1967 CPAF Guide, and DOE's 1978 Guide). The award fee is intended for use in contracting environments characterized by ambiguity and novelty. It is properly viewed as a rather loose-fitting set of strategic constraints on particular contracting and managerial tactics which, in turn, are very much situation-specific. It presumes, therefore, that award fee plans and procedures will be customized--tailored to the circumstances of individual acquisition programs--and dynamic--changing with the shifting nature of those circumstances over the life of a program. Standardization of award fee design or procedure must be regarded as a potential threat to the integrity of the method (cf. also Ulrich, 1975). It is an idea which fits uncomfortably at best with the award fee concept.⁶⁵ In short, proposals for standardization

⁶⁵The award fee method is a management process, after all, which, in its nature, is not reducible to execution "by the numbers." This fact exposes the dangers inherent in developing detailed manuals for its application: they risk counter-productive routinization. The inescapable reality of the award fee approach is its reliance on managerial judgment. It thus requires for its effective use sophisticated managers who are motivated to manage; which is to say, willing to expose themselves to risks of error.

of award fee practices should be required to offer justification before their introduction--to be regarded, as it were, guilty until proven innocent.

On the other hand, standardization which contributes to the clarity, efficiency or effectiveness of the award fee process without compromising its essential flexibility or judgmental qualities is clearly desirable. Among other things, it can help simplify the administrative process, which is good, and free time for ad hoc management tasks that resist programming, which is crucial.

Communication, Feedback and Contractor Participation in the Evaluation Process. Commonplace in the award fee literature is heavy emphasis on the importance of communication in effective program management. Award fee methodology is conceived as a means of structuring and stimulating this communication, especially in the form of feedback to the contractor on government satisfaction with his performance. This stress on communication seems to be notably less in the Air Force award fee subliteration than it is elsewhere (in NASA or DOE, for example), although it is present (cf. Runkle & Schmidt, 1975).

The award fee presumably encourages high levels of informal intra- and interorganizational communication. Of course, it also arranges formal communication structures for purposes of contractor evaluation and fee determination. Information inputs to the award fee process are generally sought from a variety of sources, principal among which are the government program office and the contractor.

AFSC practice, we have seen, is variable regarding the forms of contractor input to the evaluation process, just as it is elsewhere, in

fact. It is ordinarily solicited in some way, however (via briefings, written self-assessments, etc.). Self-serving though they may be, there certainly is no reason inherent in the award fee concept to discourage contractor contribution to the evaluation process. In fact, there are strong arguments in favor of it (e.g. the clarification of work statements). But the utility of doing it is really an empirical question to which no clear answer is now available.

The 1978 DOE CPAF Guide devotes a full chapter (Ch. 7) to a discussion of contractor participation in the award fee process. It begins with contractor input to award fee planning (starting with the RFP) and goes on to fee determination. Characterizing its orientation as a "conference approach," the DOE Guide relies mainly on frequent informal discussions with the contractor. Formal input to evaluation and fee determination is mostly optional. Regarding evaluation and fee determination, the DOE Guide encourages:

- (1) review of monitoring plans with the contractor;
- (2) regular discussions by the program manager with the contractor about the latter's performance;
- (3) a meeting during the evaluation period of the contractor with the ARB or a lower-level evaluation committee, if such exists;
- (4) formal interim evaluations of contractor performance; and
- (5) contractor meetings with the ARB and FDO before the "final stage" of fee determination plus the possibility of a written self-evaluation by the contractor.

Note that the DOE process envisages discussion between the contractor and the ARB subsequent to the latter's review of monitor reports (and other input from government organizations) but prior to fee determination, which may have the effect, so to say, of making the contractor's voice the last one heard.

Contrasting rather sharply with the informal emphases of the DOE "conference approach" is the relative formality of a Navy DDG-47 draft CPAF Manual. Here the evaluation and fee determination process would depend heavily on written reports from contractors, even at monitor levels, along with at least semi-formal contractor briefings to government evaluators.

Active concern with communication and contractor input to the award fee process, while certainly typical, is less than universal. In the interest of expediting the evaluation process and to discourage "brochuremanship" certain NASA organizations have eliminated it altogether, except for comment or appeal after FDO decision. (We have seen that some Air Force organizations are disposed to do the same thing.) NASA experience suggests that this may increase contractor discontent with FDO decisions and increase likelihoods of appeal, if such appeals are possible. No data seem to be available, however, that would allow a firm judgment on the consequences of this procedure. Given the apparent dispositions of some AFSC organizations toward discouraging formal contractor input to the award fee evaluation process, development of such data might be advisable.

In any event, written contractor self-evaluations to the ARB (with or without briefing) prior to its development of evaluation and fee recommendations is the most common means of providing contractor input

to the award fee process. Less common, but sometimes stoutly defended, is the strategy, perhaps combined with the one just mentioned, of furnishing ARB evaluation summaries to the contractor for comment (and appeal) to the FDO, before the latter's decision. Plainly this approach seeks to maximize contractor participation in the award fee process, without necessarily making him a full participant, however.⁶⁶ It may also help delay an already often slow-paced fee determination process.

Award Fee Organization

One of the most controversial issues in award fee organization seems to be its level. In keeping with DOD Directive 5000.1, current Air Force policy generally opts for lower-level organization; but a clear tension exists on the point between, on the one hand, Air Force Headquarters, which advocates high-level organizations, specifically where the FDO is at an Air Force Secretarial-level, and the Air Force components, which prefer delegation of award fee authority to Command or lower levels.

Program size obviously bears on these two positions. High-level award fee organizations make sense only in major acquisitions (defined perhaps after DSARC standards). Insistence upon a norm of high-level award fee organization would obviously have the effect of restricting the use of award fee to major acquisitions--which some advocates believe should be true anyway (but which probably accounts in large measure for the

⁶⁶ Award fee arrangements exist wherein contractor personnel are more or less full-fledged participants in the evaluation process (see the discussion of award fee organization that follows).

wider popularity of lower-level fee determination).⁶⁷

The argument for high-level award fee organization, which accepts limitation of award fee application to major acquisitions, is founded on the thesis that the success of such programs depends on getting the attention of top contractor management. Presumably getting corporate VPs to give their attention to a program will ensure their assigning their "best people" to it and doing other "good things." Establishing a high-level government award fee organization is a strategy for accomplishing this, on the assumption that such an organization will "force" the contractor to match it, which, on the record, probably is true. Probably a high-level organization is sensible, too, for very large programs like AWACS, although some people who have been associated with that program wouldn't agree. The question, however, is whether it is desirable to restrict award fee to major acquisitions.

A major reason why some who favor Secretarial-level FDOs are also willing to accept limited major system use of award fee is, I think, because, first of all, they doubt that small programs are suitable for it, and, second, because they suspect that over-use of award fee contracts will vitiate their effectiveness as an "attention-getter." How much top management attention, after all, can be given to how many programs?

⁶⁷ Unsurprisingly, Army and Navy practices mirror those in the Air Force. For example, Army Missile Readiness Command Supplement 3-405.5 advises use of a relatively low-level award fee organization in which the FDO is either the Head of the procuring agency or the Director of Procurement and Production, and the ARB Chair is the project manager. A recent Navy draft award fee manual followed a similar pattern, but raised the level a bit to where the ARB Chair was above the immediate project manager.

The rationale for the first of these arguments runs to the effect that statutory profit limitations attenuate the effectiveness of award fee applications in small programs--"they can't earn enough for it to count." Not necessarily inconsistent with a view of contractor motivation as more than merely monetary, the argument simply suggests that crucial high-level contractor management will not give their attention to low-profit programs.⁶⁸

Furthermore, it is argued, high-level award fee organizations have the effect of excluding from the award fee organization, proper, and the actual fee determination process, people who have direct interest in the program. This is believed to reduce bias and conflict of interest in the evaluation process. For this reason, a higher-level award fee organization may enhance the credibility (to the contractor) of the award fee evaluation process, and, at the same time, help underscore the importance the government attaches to any program so administered. As one NASA official has put it:

"The contractor's readiness to accept and react to award fee determinations in the constructive manner anticipated by award fee concepts is dependent upon his belief that evaluation procedures

⁶⁸ Actually, among contractors there is an image of the award fee as "pure" profit which, whatever, its magnitude, to a reasonable minimum, might counteract this weakness. Byers (1973), in fact, found no relation between magnitude of award fee and contractor performance. A study by the NASA Procurement Management Division (1976) found no clear relationship between size of award fee pool and the contractor's responsiveness. This study concluded that "some contracts have shown good results with only a small award fee incentive. In others, particularly the hardware contracts, good results came only after restructuring the award fee pool to substantially reward the achievement of milestone events." And from a study done a decade earlier by Booz, Allen and Hamilton (1967), NASA concluded that "CPAF contracts can deliver tangible benefits irrespective of...the dollar value of the contract."

are fair, and serve to protect him against arbitrary or capricious determinations. This includes an award fee determination made at a level that assures the type of management attention...the contractor believes consistent with his stake in that determination. If the contractor does not believe this is so, then the Government's use of the [award fee] contract as an effective management tool may be seriously jeopardized."

But high-level award fee organizations require the time and attention of a very limited cast of characters who are otherwise very busy. As a result, the evaluation and fee determination process may become slow and cumbersome, at best. Knopf (1977), for instance, argues that a high-level FDO adds nothing to the award fee process except cost.

Some observers deny a conflict of interest advantage to high-level organization anyway, pointing out that however the award fee organization is structured, it is the program manager who wields the greatest influence on its outcomes. Moreover, arranging for the FDO to be someone not associated with the "buy" clearly does not ipso facto require that person to be an Air Force Secretary. In fact, many who prefer that the award fee organization be set below Secretarial levels still would establish it outside the program office; or they would not name a program manager as FDO, or possibly even as ARB chair.⁶⁹

A secondary argument that has been advanced in favor of Pentagon-level award fee organization is that it affords top-level government managers a

⁶⁹ NASA, in addition, has been disposed to allow contractor appeals to an installation Director whenever the FDO has been established at a lower level.

means of executive review of programs without "going through the system." Instead they can talk directly with both government program and contractor people. How important or useful this is, like many other things, isn't entirely clear.

One thing that does seem clear is that advocates of high-level award fee organization tend also to be committed to a managerialist philosophy of program control. Rather than trust in contractual or other nostrums, they mostly believe in the efficacy of direct effort by human managers to solve program problems. This viewpoint is consistent with a stress on putting award fee on management factors; and, interestingly, high-level award fee organizations seem to be associated with a greater informality of award fee evaluation. They are "rarely oriented around the scoring systems seen in lower-level award fee plans."

Managerialist philosophies are not unique to persons who advocate Secretarial-level award fee organization, however. In arguments about level, the key consideration seems not to be managerialism, per se, but which humans should be doing the managing, and whose attention they need to get. Partisans of lower-level organization contend that people nearer program levels are better informed about realities of the work; and evaluations of performance are therefore made by persons who know "what's going on." In general, the thesis here is that, for effective program impact, it is the program-level people in the contractor organization who need to be "motivated." Hence, the award fee organization needs to be set "at a level where we're working with the contractor." Indeed, it was suggested by one well-positioned individual that most difficulties in AWACS were

attributable to the "nature of its award fee organization."

Presumably communication is degraded in a high-level organization, and suffers more from "politics."

Now, there is nothing about a Secretarial-level FDO/ARB, be it noted, that requires contractor evaluation by uninformed people. Programs may introduce intermediate-level "evaluation committees," and, in any case, task-level monitors are employed in virtually all evaluation plans.⁷⁰ There is no question, however, that high-level organization requires more organizational elaboration that may prove cumbersome.

The ability of top managers to control organizational processes and outcomes has customarily been much exaggerated. For that reason, among others, I have argued for establishing the award fee organization at the lowest feasible level. As a management strategy, the effectiveness of the award fee may be vitiated by a long chain of command, which impedes communication and control. Not only is it hard to get the "message" down to the troops, it is hard to get feedback up the chain. Lower-level managers may tend to withhold information in order to maintain a "good" image of the program. This fear obviously takes seriously the idea that, in effect,

⁷⁰ When the award fee organization (FDO and ARB) is established at a high level, NASA has made use of a "Performance Evaluation Committee" (PEC) to bring the basic evaluation process closer to working levels. (The same strategy is recommended in the 1978 DOE CPAF Guide.) It seems likely that in practice any entity such as a PEC will constitute the effective monitoring and evaluating agency, much as the program office does in most of the AFSC programs reviewed for this study. The PEC-ARB-FDO arrangements does, however, satisfy the perhaps desirable condition of high-level review of the award fee evaluation process, without impeding the pace of fee determination.

the government program manager is evaluating himself along with the contractor. In short, he/she is evaluating a joint program.

The conflicts of interest implicit in this circumstance are, of course, among the reasons for imposing regulations and other system-type management controls. It is also a solid ground for arguing the merits of high-level award fee organization as a means of enhancing policy-level visibility and oversight. On the other hand, the influence of the program manager over award fee outcomes has already been noted; and lower-level award fee organization keeps both with that fact and with the current trend to accord greater recognition to the program manager's role, and greater discretion in its performance.

Standardizing Award Fee Organization. One way of cutting the Gordian knot of award fee organization-level, at an obvious cost of flexibility, is to fix it in advance by establishing a "permanent" one. This, it was noted, has been done at SAMTEC; and AFSC policy guidance generally has tended in this direction. The 1978 DOE Guide, too, notes the possibility of such an arrangement, adding the suggestion that, if it is done, the permanent ARB be "augmented" for each award fee contract.

Clearly a permanent award fee organization simplifies planning. It may also result in a highly experienced and sophisticated group of award fee administrators. But the jury still is out on whether this degree of formalization and centralization is worth the loss of design flexibility and other costs it entails. The same can be said about some other variable features of award fee organization to be seen in the AFSC and elsewhere.

Role Differentiation in the Award Fee Organization. Whether or not the FDO and ARB Chair should be lodged in the same office/person is a design choice. Usually this isn't done, but occasionally, in large programs with high-level award fee organizations, it is (e.g. the AFSC AWACS program, the NASA Viking Program). The new DOE Guide (1978) advises against the practice on the ground that the FDO needs to be "above the persons who are involved directly in performance evaluation" (p. 2-6B1). Many other acquisition professionals hold the same view. Their rationale for it has to do mainly with preserving a system of checks and balances to maintain the integrity (and credibility) of evaluation and fee determination. In the absence of empirical contra-indication it seems a reasonable thing to do.⁷¹

Implicit in the foregoing is a general issue of functional differentiation in the award fee evaluation and fee determination process. The DOE Guide (1978) devotes half a page to this issue (Section 3, p. 2-6B1), emphasizing that the "functions" specified for performance in an award

⁷¹The Viking award fee organization was an unusual one which the A-10 somewhat resembled. In the first place, there were, in effect, two separate award fee pools. One of these provided for periodic awards based on contractor technical and management performance during development of the program. The other was a one-time award based on the quantity and quality of the data obtained from the Lander. For the first of these pools, the Langley Director served as FDO and as Chairman of the ARB, which had two other members. For the "mission success" award fee, however, a separate higher-level Board was responsible. An interesting feature of the Viking award fee plan for the first pool was that there does not seem to have been an FDO in the usual sense of some individual acting in that capacity. Instead the ARB seems to have constituted a committee cum FDO.

fee organization are roles not to be confounded with other roles or with specific individuals, even though individuals must perform them and those individuals may occupy other positions. The Guide argues, for instance, that

"the AFDP [Award Fee Determination Plan] and contract [should] not specify that the Contracting Officer is the FDO, or that the FDO is the Contracting Officer. While one person may represent both functions, each is discrete from the other and requires separate and definable actions during the period of contractor performance" (p. 2-6B1).

This Guide also urges that performance monitors (and any other evaluators) "maintain a clear distinction between their regular functional responsibilities and those required of them as members of the CPAF administration team" (p. 2-6B1). Partly this functional differentiation is in the interest of avoiding unintended communications to the contractor implying changes in contract scope or what not. But it is also intended to highlight the special responsibilities of functionaries in the award fee organization, who, as in any other matrix management structure, have other responsibilities as well.

Keeping with its concerns for differentiating award fee evaluation roles from those otherwise performed by the evaluators, the DOE Guide devotes considerable space to discussing procedures for preparing monitors for their award fee-specific duties. In addition, to briefing and indoctrination, the DOE Guide advises elaboration of the award fee organization "whenever a relatively large number of PMs [Performance Monitors]

are necessary" (p. 2-6B4). "Function Monitors" are proposed for this role. They would consolidate findings of PMs⁷² for presentation to the ARB (or any intermediate evaluation committee); but they would also, and more importantly, "provide centralized direction to the various PMs." In other words, Function Monitors control the Performance Monitors, presumably to regulate their differentiated performance specifically as award fee evaluators. (Use of this two-level monitoring arrangement was noted in certain AFSC award fee programs.)

Another structural variation on award fee organization was proposed in the 1967 NASA CPAF Guide. Using a single set of monitors, it involves establishment of separate evaluation "teams," one, under the Program Manager, to assess contractor technical performance, and one, under the Contracting Officer, to handle "business" performance. No instance of this mode of award fee organization was noted in the AFSC programs selected for this study. A somewhat similar organizational plan was envisaged, however, in a recent Navy draft CPAF Manual. In it, monitors would be divided into Technical, Cost, Schedule, and Management Teams, plus sub-teams relating to specific evaluation factors. The fact is that, except in small uncomplicated award fee programs, functional differentiations such as this probably develop informally, especially when multiple monitors are assigned as reliability checks to particular evaluation factors, as the NASA award fee Guide (1967), for one, recommends.

⁷²The DOE Guide recommends that the PEB (ARB) Chairman notify the contractor of PM assignments.

Contractor and Program Manager Roles in the Award Fee Organization. Two other award fee organizational matters warrant discussion: contractor representation on the ARB, and the relation of the government program manager to the ARB. Whether a contractor representative might be seated on the ARB or not is to be distinguished from the idea of using another contractor as "consultant" to the ARB (as MITRE personnel sometimes are used at ESD). It is also to be distinguished from the broader issue of contractor input to the ARB, although, plainly, putting a contractor representative on the Board is one way of assuring input. No instance of this was observed in the AFSC programs studied here; nor is any actually known to me elsewhere. The idea is advanced, however, in a Navy draft award fee manual. In this model, a representative of the contractor would participate with the ARB in its deliberations on program matters, except, of course, when fee recommendations are under consideration.⁷³ This notion takes seriously, if perhaps only by implication, the concept of joint government-contractor management which is basic to the award fee method. Whether or not it is, in effect, a limiting case of the concept in application, or extends that model too far, is an interesting question for debate.

Turning to the program manager, we have noted that, in the AFSC at any rate, the program manager was sometimes, but not normally a literal

⁷³ A recent masters thesis by Jenkins (1979) suggests that the Navy AEGIS program included the contractor general manager in its award fee evaluation board meeting where he was, in fact, given a vote.

member of the award fee organization. Apparently in some Army organizations he more often is a member (cf. U.S. Army Missile Readiness Command ASPR Supl. 3-405.5). Generally speaking, an award fee organization which defines the program manager/office as a semi-separate external source of input to the award fee evaluation and fee determination structures is probably "cleaner" than one that organizationally incorporates the program manager. Certainly it is more in keeping with ideas of avoiding conflicts of interest and preserving role differentiation in the larger award fee/program management process. When a program is small, however, strict adherence to this elaborated organizational form may be counterproductive. In such cases, establishing the program (or project) manager as ARB Chair results in a leaner less expensive organization and is probably sound practice. One then would expect to see the ARB function directly and intimately in the contractor performance monitoring and evaluation process. The Board, in effect, would be coincident with the principal program management team (monitors, etc.), augmented perhaps by others (PCO, etc.).

The Fee Determination Plan

We have noted the tradition, clearly present in the AFSC, of setting CPAF base fees at about 2-3%. Generally in the Air Force this is looked upon as a return to the contractor chiefly to cover unallowable costs. The 1978 DOE Guide strikes a different posture toward the base fee, saying it is "designed to compensate the contractor for factors such as risk, investment, and the nature of the work..." (p. 2-1A3), and that it constitutes compensation for "minimum acceptable" performance. The Guide accordingly counsels taking a variety of things into account when setting

base fee, such as contractor past performance, task complexity, etc. NASA award fee policy has been similar.

It was noted earlier, and here again, that DOE award fee guidance provides for award fee payments to contractors performing below "standard," or at least at levels no better than "satisfactory." Some NASA programs do this too, as, apparently do some in the Army and Navy; and, as we have seen, so have some AFSC programs. On the whole, however, DOE seems to be more accepting than AFSC of fee awards for "minimum acceptable" performance, allowing as much as 50% of total fee for this level of performance. In reality this CPAF structure seems to move close to at least partial conversion of CPAF to CPFF.

The truth is, however, that on this count comparisons of practices, even between organizations within the AFSC, are difficult. Variable grading practices render excessively inexact the definition of "satisfactory" or "standard" or "minimum acceptable" contractor performance. Whether or not standardization of this definition is a subject for research, it is definitely a subject for policy consideration. Resolution of the issue is not likely to be easy, however, because, definitional ambiguities notwithstanding, differences in attitude plainly exist throughout the Air Force (and other federal agencies) as to general criteria of equitable payment to contractors.⁷⁴

Can Contractors Earn Maximum Fee? Related to the issue of equity is a

⁷⁴ Carter (1977) reports finding a negative correlation between award fee payments and magnitude of fixed (base) fee, and concludes that increases in fixed fee may act as a dis-incentive for the award fee.

problem nowhere addressed in AFSC award fee policy: viz. the problem of designing award fee evaluation and fee determination plans that actually allow the contractor to earn maximum fee.⁷⁵ The DOE Guide (1978) addresses the issue explicitly in its discussion of fee determination plans (which unfortunately it confounds with evaluation plans). In planning, it urges attention to the attainability of the highest performance levels envisaged by the plan. I and others (e.g. Carter, 1977), have observed that award fee plans often are such as to make earning the full potential fee, if not technically impossible, then effectively infeasible.

This is rarely, if ever, deliberate, of course. Partly it is a result of the "schedules" used for transforming evaluation "points" into fee; and partly it is a more immediate consequence of how evaluations are made. Realism in setting evaluation standards and expectations, together with a willingness in evaluation to take into account both the level of performance and the conditions under which it is attained, would doubtless enhance equity and perhaps make it more possible for contractors to earn fee over the entire nominal range. To be sure, it could also work differently by denying contractors reward for fortuitous outcomes; but then equity is for both sides, isn't it?

⁷⁵ Some observers believe contractors already seem to be getting nearly all available award fee. Actually the record indicates that to the contrary contractors are receiving distinctly less than the total possible award fee. AFSC data on this were reported earlier; and Carter (1977) has reported mean awards of $83 \pm 6\%$ for DARCON award fee contracts, with the notation of a tendency toward lower awards among new contracts. Fees in any case have tended to be "modest" (Stucker, 1970).

In the matter of converting points into fees: most award fee schedules typically assign amounts (fractions) of fee in constant ratios to given numbers of evaluation points. For example, the DOE Guide allocates 2.5% of award fee for each performance point above 60. Any sensible allocation rule could be used for this purpose. This one, and other simple linear schemes like it, is not necessarily sensible, however. As another illustration of this, the DOD Space Transportation Payload Integration contract (F04701-77-C-0183) arranges an approximately linear payout of .09% of award fee for each evaluation point from zero through 88 (i.e., from "above average" through "very good"). From 89 through 100 points, the rate of fee payout shifts to .083% per point. Now, the rationale (if any) for this shift is unknown; but, if it truly is desired that the contractor perform at an "excellent" level, and if it is assumed that this is harder to do than performing at a "very good" level (and, of course, assuming that the award fee influences performance), then the payout formula is irrational: increments to performance which are more difficult to make are rewarded with smaller amounts of fee.

Actually this is true as well of the effective payout formula for performance through the range 0-88. Assuming that improvement of performance over this range becomes progressively more difficult, then, on the linear plan, the relative reward effectively diminishes through the range.

On the other hand, if one assumes that the marginal utilities to the government of increments to contractor performance decrease over the range from zero to 100, or at least 89-100, then the observed payout scheme appears more rational, provided that the empirical value of fee in ratio to performance resembles estimates of those marginal utilities.

Elsewhere (1971) I have pointed out, as has Carter (1977), that if one is genuinely interested in maximum performance, one must recognize that ordinarily, as it is approached, increments to quality become progressively harder to accomplish. Given that this is true, then, a "sensible" evaluation/fee conversion plan would increase the ratio of fee to performance points (or, equivalently, vary the system of awarding points) to progressively increase rates of fee award at higher levels of performance. But, in fact, one is not often interested in maximum performance, even if one could define it (maybe especially if one could define it). Rather, one is usually interested in "good" or "high" performance levels, but not necessarily a maximum one. In these cases, instead of making fee proportional to effort (as the DOE Guide, for example, advises), an allocation of fee units to performance units aligned with estimates of the marginal utility to the government of increases in contractor performance would be "sensible." In any case, constant-ratio award fee pay-out schemes are rarely likely to be "sensible."

Other means of making maximum fee attainable exist. One of these requires rolling-over unearned fee from earlier to later periods, or accumulating it for possible "and-make-up," as one commentator dubbed it, program-end award (in whole or part). AFSC policy, of course, opposes this tactic, although it has been done there. The Army apparently dislikes the idea, too, but other agencies are friendlier to it, especially NASA. The DOE Guide goes no further than saying fee will normally not be carried over. NASA's Viking program had a discretionary carry-over provision applicable during the course of the program. In addition, it provided that any remaining unawarded fee would "inure to the lander mission award fee," which was a separate pool.

There is no simple answer to questions on the desirability of this practice, but, on its face, it is not inconsistent with sound acquisition strategy. Ad hoc considerations of equity (fairness) could conceivably benefit from carry-forward arrangements for fee, a variety of which are possible, as, for that matter, could acquisition strategy. This being so, a somewhat permissive policy on the practice is arguably desirable.

It can be said, however, that this by rights is a two-way street. In the words of one NASA official: "The CPAF approach involves the exercise of educated judgments...and to the extent these judgments are exercised while performance is in progress, and on the basis of information then available, there exists a certain risk that subsequent events may prove them wrong." Clearly this fact is consistent, on one side, with the idea of carrying unearned fee forward with the possibility of awarding it later, even retrospectively, if events justify it; but, it would also justify taking awarded fee away, if that were justified, again even retrospectively. Thus, one might be led to argue a course where fee awards, except the last, are "provisional" and subject to upward or downward adjustment as subsequent events indicate, something NASA has done, if only within award periods.

On the face of it this seems a cumbersome procedure fraught with all the programs of hindsight and high potential for conflict. Possibly a simpler solution is one that simply exploits the flexibility of the award fee. Period-to-period planning might just allocate fee variously to evaluation factors and periods of special importance to a program. Plans, then, depending on the wisdom of their authors, might or might not include provision for carrying over previously unearned fee to later periods or to a program-end "mission success" decision (a la Viking).

How best to allocate fee over evaluation periods is another unsettled point of award fee technique. The AFSC, we know, inclines toward late- as opposed to early-loading. In addition to what I suspect is simple faith in "carrot" concepts of incentive motivation, this reflects one judgment on the distribution of "important" program stages and events--late ones, in this model, are more important than early ones. Other models are possible. Arguments from a developmental perspective could justify a loading pattern exactly opposite to the AFSC preference. The point, however, is that period-to-period fee allocations represent judgments on both the relative importance of program stages and how to concentrate attention and effort on those stages.

Since practice on the point is highly variable, one may infer that these judgments have been equally variable. One hopes this is so because the circumstances of individual programs are different and fee allocations are well-adapted to those differences, but we have no way of knowing if this is true; maybe it just reflects different people's preferences. I think we do know, however, that a single one-best rule for fee-loading as often as not is apt to be situationally inappropriate. Circumstances vary, why shouldn't fee allocation?

A number of practical considerations may make the AFSC late-loading model sometimes unwise or unfair or both. For one thing, it poses a major problem for evaluation methodology if and when early "errors" are cumulative in their impact. An untempered late-loading fee arrangement may then have the devastating unintended consequence of attenuating contractor motivation. If his fate was sealed early-on, instead of the heroic efforts high later fee potentials are expected to produce, the contractor may just lose interest, especially if, as seems often true, he orients to fee "lost" as well as gained. There is reason to suspect

that this was a problem in the E-3A program, where it served at least to attenuate contractor responsiveness to the award fee. Another difficulty with incrementally graduated practices is that evaluation may suffer (or cause the contractor to suffer) from inconsistencies of practice as a consequence of near-inevitable and often extensive turnover of personnel in government organizations. This whole issue of period-by-period fee allocation is clearly a matter for further government policy review.

Appeal of FDO Decisions. There seems to have been little consideration given to it elsewhere, but NASA, which has traditionally emphasized matters of equity and credibility in award fee determination, provided in its 1967 Guide for appeal of FDO decisions whenever the FDO was lower than the Center Director level. This idea has been controversial and actual NASA practice has been variable across its Centers. Overall, NASA policy tends to encourage eliciting contractor agreement before establishing award fee plans which set the FDO at relatively low levels (i.e., below Center Director); but it tends to discourage appeals of FDO decisions to higher management levels, except in cases where the FDO also chairs the ARB. NASA also discourages changing the level of the FDO during the life of a contract, but does not restrict the ability to make such changes.

Weighting Evaluation Factors. Most award fee users, for better or worse, follow the practice of weighting evaluation factors. Like the AFSC, the Army Missile Readiness Command ASPR Supplement, and most others, counsels against informing the contractor of exact weights, but it is often done. An AFLC property management test contract (no. F09603-77-A-0591) at Warner-Robins ARB illustrates it.

At least one NASA organization has avoided weightings altogether; and NASA policy generally has emphasized the relative nature of weightings (important, unimportant, etc.) instead of ascribing absolute quantitative precision to, say, percentage weights, as sometimes seems to be done in the AFSC.

The same NASA organization which discouraged weighting award fee evaluation factors is also unusual in not employing the award fee as a reward-only device. Instead it has used an upward-downward adjustment approach, which is in the spirit at least of some current AFSC sentiment.

Apart from the scoring procedures on which fee determination is grounded there are a few other issues that deserve further airing. One of these issues has to do with statutory (DAR) limitation of fees payable to contractors. Complaints have been heard to the effect that these limitations inhibit wider application of award fee strategies. Part of the difficulty is attributable to considering award fee application as if CPAF formats, where fee restrictions obtain, were the only ones possible. By and large, however, the general sentiment among those displeased with the narrow fee ranges permissible for award fee use has been simply that more discretion is in order to enable creative application of the concept. "If it's good," argued one procurement policy official, "why not open it up? Why only 10% for non-R&D?"

Award Fee Pass-Through. Contractors in some way passing fee awards through to personnel within their organizations, if not universal, is known to happen--perhaps as bonuses to selected managers, or awards to key performers, or just award fee parties, when results are good.⁷⁶ The

⁷⁶At a 1978 Industry/SAMSO Conference and Workshop on Mission Assurance the McDonnell-Douglas (Huntington Beach) Director of Contracts, Patrick McGinnis, mentioned an arrangement on an "off-site" contract in which all personnel shared 60% of the earned award fee.

desirability of pass-through is debated. First of all, it may be pointed out that it depends on who "you're trying to motivate." If it is top contractor management, pass-through becomes a non-issue. Second, there is a question of how much difference it makes anyway. For example, one experienced procurement official claimed "pass-through doesn't count," and offered the argument in support of his position that "guys making \$50,000 don't care about another 5% salary as much as they want other perquisites like rugs on their office floor--which they often get, if they're solid performers."

Be this as it may, sentiment in the award fee community seems to be that some form of pass-through is desirable, on grounds of justice if not motivation. Whether this should become a matter of policy, however, is quite another matter. I have suggested that one feature of award fee theory in contrast with the motivational model of mechanical incentives, is that it leaves motivation of contractor personnel to contractor management. Admittedly a joint management model for system acquisition makes the motivation of contractor personnel a legitimate interest of government managers, too. Still, in the interest of avoiding micro-management, work overload, and the like, it does seem a sound division of labor, as well as a way of underscoring organizational separateness, for contractor and government managers to manage and motivate their own people.

A rather different problem about fee has to do with its credibility.

For example, administrative lapses have resulted, on occasion, in failures within programs to commit funding for the award fee. This, and other happenings like it, delays payment, and, to the degree that timely payment counts, attenuates the potency of the method.

Finally on the subject of fee: reacting to General Slay's stress on contractor accountability and his wishes that contractors be rewarded when they're good and punished when they're bad, workers in the field are seeking ways of devising "negative" award fees. One strategy, already noted, would simply take away provisionally awarded fee on the basis of subsequent evaluations. Another is to employ zero-baser for the award fee, presumably on the belief that submarginal performance would then earn no fee at all and thereby result in loss because of unallowed costs. Thus, via the award fee, one may "zero-out" a contractor without constraint from a "disputes clause."

The most widely favored "negative incentive" idea, however, is the use of reliability improvement warranties (RIWs), probably because of General Slay's affection for them. Now, strictly speaking, RIWs have little to do with award fee strategy, except insofar as both are implicated in a more general acquisition strategy (cf. Knepshteld, 1976). The fact that RIWs are looked upon as attractive negative incentive innovations, however, says something about the states-of-mind with which award fee is approached by many in the AFSC.

Conceptions and Perceptions of the Award Fee

Attitudes toward the award fee in the AFSC, although favorable in the main, vary from enthusiastic advocacy to outright hostility. Whereas some see the subjectivity of the award fee as a disabling defect, and dislike it for that reason, others view this same subjectivity as a major virtue, which, if anything, is too often compromised in Air Force award fee applications. Still others just accept the award fee because

"there is no alternative when you can't use FFP."

In addition to its subjectivity, other features of the award fee, too, get mixed reviews from its users. Flexibility, an award fee hallmark, is sometimes perceived to override discipline, or to result in government officers exploiting contractors to develop "personal services fiefdoms." Administrative burdens necessary to implementation of the award fee are viewed as excessive by some observers. The "bonus concept" basic to the award fee is now and then looked upon as (a) inappropriate, because in the first place, "we pay a good price, and should get what we pay for," and, in the second place, because there should be "negative" incentives to balance the positive ones; or (b) ineffective because "incentives," subjective or objective, can't affect contractor performance. And, if the award fee succeeds in capturing and directing contractor management attention, as apparently it does, there are those who believe it too often directs it improperly by sending the wrong signals.⁷⁷

Most of these complaints are recognizable as management problems which are independent of the award fee per se. The key question, then, is whether the award fee helps resolve them or worsens them, or is irrelevant to them. Most award fee enthusiasts vote for the first of these alternatives. They regularly mingle their catalogs of its virtues (accommodating uncertainty, stimulating communication, eliciting contractor responsiveness to government direction, through-the-line involvement in the acquisition process and high-level people "in the loop" on both sides, etc.) with commentary on ways in which the method helps discipline the program management process on both sides. Administration of an award

⁷⁷ Actually it is a bit surprising that so few complaints were voiced about this. One would anticipate that in any "informal" setting with high rates of communication, "static" from all those informal messages would at least make differentiations between "signal and noise" problematic.

fee contract, they suggest, requires of a SPO nothing that "shouldn't be done anyway for good management;" but, they are convinced, at least some of these things would not be done, or would not be done as carefully, in the absence of the constraining disciplines of the award fee.

Certain observers are distinctly unhappy with award fee administration in the Air Force. Mostly they complain of four things. too many futile attempts at quantification, too much avoidance of subjectivity in evaluations, excessive fragmentation and overmeasurement of evaluation factors, and too frequent employment of the method as a means of punishing rather than rewarding contractors.

Now, it does seem clear enough that many users of the award fee look on it more as a stick than a carrot, and are fond of it mainly for its utility as a way of penalizing contractors for mistakes. It is also clear enough that an "objectification" bias is widespread in the AFSC. As one program manager noted in something of an understatement: "We probably don't operate as subjectively as the original framers may have intended." A division-level procurement official who agreed with this view did so by way of explaining that the award fee of today is not the award fee of the '60s because today fee is awarded "just for doing the job, not for excellence."

Thus, in addition to simply "good" or "bad," conceptions and perceptions of the award fee can be sorted in a variety of interesting ways. One of them, however, is basic: namely, whether the award fee is looked upon primarily as a means of compensating contractor performance or as a framework for program management. The two viewpoints are easily discriminable by the simple expedient of noting the relative emphasis given to the award fee as an "incentive" or as a "report card." The

"report card" view stresses information flow, capturing contractor management attention at corporate or program levels, depending on one's beliefs about where program success is determined, disciplining program control functions, and ensuring ample latitude for human management, if only to "compensate for poor plans."

The "compensation" view, on the other hand, tends to embed award fee methodology in an adversary orientation to joint program management and to use the award fee as a "stick" to coerce contractor compliance with government directions. Those who hold this view are not indifferent to questions of equity in evaluation and payment; but they see it best served by objectification of criteria and detailed measurement of performance.

Commitment to one as compared to the other of these basic conceptualizations of the award fee has important implications for practice. One FDO-level individual, for example, a "compensation" partisan who nevertheless regards award fee as a "good device, if well thought out and selectively applied," argued vigorously against using it for overall program evaluation, and actively dislikes "putting award fee on management." Another FDO-level individual, with a "report card" perspective, strongly favored use of award fee to assess program outcomes, including, he noted, costs of ownership. In the eyes of many others similarly disposed, award fee should only be used in acquisitions where management issues are decisive.

"Report card" and "compensation" concepts of the award fee are translatable to what I have otherwise termed "managerialist" and "contractualist" orientations. It seems to be true that the managerialist view of award fee is predominant at higher Air Force levels and the contractualist view at lower levels, although nothing like unanimity exists either place.

Given these different outlooks it will not be surprising to learn that quite different impressions of the status of award fee contracting exist today in the AFSC.

Status of the Award Fee Method

An early award fee theoretician, Gordon Rule, argued that limitations on the use of award fee were essentially only matters of willingness to use it. Award fee was, in his view, a universal alternative to any other contract form and not just an alternative to CPIF or CPFF.⁷⁸

Most contemporary views on the status of the award fee, especially in the Air Force, even when they are favorable (as they often are), are less expansive than Rule's. Still, one oftens hears complaints that "we're not getting the mileage we should from it." Sometimes this is attributed to excessive administrative burden or to some other procedural issues,⁷⁹ but most often it is not very clear why "mileage" is so low. So vague are the proffered explanations, in fact, that one is tempted to conclude that the problem is simply the failure of award fee to be a panacea.

Be that as it may, practitioners do commonly feel a need to "stream-line" award fee administration in the interest of getting better mileage from it. As one program manager said: "CPAF is a monster"--but, short of personal service contracts, "there is nothing better." As a generality, then award fee seems to be seen as worth its costs--as providing a "good

⁷⁸Personal communication

⁷⁹One estimate of award fee burden for a moderate-size NASA program in 1971 was \$50,000/yr. Total administration effort was broken down as "evaluation labor" (3455 hr/yr) and "debriefing labor" (1020 hr/yr). This is rather greater than an estimate by a Systems Command program manager of effort equal to approximately one full-time equivalent person for a large Air Force program. Burden is probably relatively insensitive to program size, although one would expect more paper to flow as program complexity increases, or hierarchy grows, or formalization increases.

systematic basis for performance review, and helping make the contractor aware of a need to perform well." ⁸⁰

An often-expressed difficulty with award fee administration, however, is that everyone has to do it as a sideline. This observation plainly implies a conception of award fee as a contractual overlay on program management proper, rather than as an integral part of it. The integration of award fee administration into program management is thus incomplete, even among protagonists of the method.

Perceptions of Policy Regarding Award Fee Use. Queried on the status of the award fee approach, generally, as well as in the Air Force and Systems Command, the persons I interviewed gave answers ranging all the way from "it's out" (because of General Slay's emphasis on fixed price contracting) to "we are enthusiastic about it." Signals on the subject were mixed at all levels in the Air Force, while in other organizations, like the Army and NASA, award fee now seems to stand more unambiguously as a well-accepted approach to acquisition.

Interestingly, however, the reasons for the apparent uncertainty regarding the award fee are not the same everywhere in the Air Force. At "field levels" it seems to relate mainly to two issues: (1) uncertainty regarding the import in AFSC of General Slay's stress on fixed price contracting and commercial practices, which are seen as incompatible with the award fee; and (2) personal dislike of the award fee strategy, especially

⁸⁰ One project officer went so far as to say that he especially liked the award fee because it "took the pressure off the contractor to worry about costs--he can concentrate on technical matters."

the subjectivity of its evaluations. At higher levels of the Air Force, on the other hand, award fee apparently is thought currently to be "on the decline" mainly because of a different more organizational set of circumstances. As one interviewee put it: "reorganization in the Air Force has expanded Secretarial-level spans of control to where the award fee process has become infeasible--the people who need to be just can't be closely enough involved to make it successful." Also, in the contemporary Pentagon there is said to be a lessened interest at Secretarial levels in "business" considerations--they do not wish to be involved in these matters and hence acquiesce in tendencies to lower the level of award fee to the field.

These circumstances tend to interrelate, of course. Certainly it has been true that award fee organization, in the Air Force and elsewhere, has tended to be set at lower organization levels (DOD Directive 5000.1 encourages it). Nor have there been any large award fee programs of late, perhaps partly because of Secretarial disinclinations to involvement, although perhaps, too, because, as one Air Force official speculated, program offices are avoiding the award fee as a means of avoiding Pentagon-level reviews. And, of course, swings of managerial styles and procedural fads do exist in all organizations.

General Slay's posture toward the acquisition process in general and the award fee in particular is plainly important, as much in how it is viewed (which is highly variable) as in what it actually is. Regarding the latter he appears to favor award fee application in development efforts seeming to advocate its introduction for particular purposes in non-cost contracts; and he appears to favor CPAF contracts as work moves closer

to research. On the whole, his conceptual emphases on profit-for-performance, planning, accountability, and program discipline seem harmonious with award fee methodology, although there are some problems on other counts, which we'll consider later.

At any rate, it seems likely that current uncertainty on the status of award fee relates in the first instance to how the method itself is understood. Several high-level Air Force officials expressed the belief that award fee, as technique, was not well-understood "in the field," nor do people there understand "what we're trying to do." Better education of Air Force personnel on award fee philosophy may then continue to be an essential unachieved precondition to effective use of the award fee method. But, even given clarity on the nature of award fee concepts, there remain questions on how well those concepts square with a given policy environment.

Acquisition Strategy

By strategy here is meant a set of concepts defining some rather broad goals for any acquisition together with general methodologies for achieving them. Contemporary DOD aspirations for reducing program life cycle costs, with special emphasis on costs of ownership, illustrates strategic concepts, as do the ideas advanced by OMB Circular A-109 and DSARC doctrine. In the AFSC, however, the dominant strategic doctrine is associated with its Commander's Policy Letter No. 22--the so-called "Slay Initiatives." A good part of all activity in the AFSC acquisition community (both procurement and technical branches) represents striving to interpret and appropriately apply this strategic doctrine to concrete buys.

The essence of the "Slay Initiatives" is captured by the General's insistence upon conducting future Air Force acquisition more in keeping with what he considers "commercial practices."⁸¹ He admonishes contractors to treat the Air Force "like your commercial customers," and cease trying to do "business as usual" with Air Force customers. Achievement of these large objectives plainly places responsibilities on Air Force personnel to behave in harmony with the strategic doctrine-- in short, to behave as much like commercial customers as possible. To that end General Slay offers guidance in the shape of some thirteen "initiatives." These initiatives touch a number of bases, from planning and baselining through forms of contracting to ways of increasing competition and budgeting. But the "commercial practices" theme is basic, along with its implied presumption of essential similarity of government and commercial "marketplaces."

Some observers question the acceptability of the General's premise, saying that commercial practices do not depend upon a statutory base the way federal acquisition does. Socioeconomic objectives are integral features of government acquisition strategy, for the Air Force as for any other federal department, and that sets them apart from the commercial world.

Other observers argue that the General knows full well that commercial and government acquisition environments are not the same. What he wants is accountability and discipline on both sides of the joint acquisition

⁸¹ This idea was also featured in remarks by the Director of the Office of Federal Procurement Policy, Leslie Pettig, at the Seventh Annual DOD/FAI Acquisition Symposium, Hershey, PA, 1978.

relationship. Care is to be taken, he believes, to maximize budgetary returns; and consequences of actions should count--for or against.

General Slay exaggerates, perhaps deliberately just to make his point, the observance by business of "commercial practices"--among themselves they tend to rely on standard lists of suppliers rather than on competition, for example, and informal "noncontractual" considerations are prominent in business dealings. Moreover, those in the acquisition community who maintain that "fixed-price or no, there's no way we'll go back to arms-length procurement" surely are correct. The system is a joint management system which, in fact, Slay recognizes, too, by calling its problems "mutual". Still, it is a system, like others, where control is relevant and disciplined management appropriate.

Government-Contractor Relations

Among technical people in government there are strong latent preferences for an arsenal system of acquisition. One individual interviewed by me in a previous study in fact described the extant system as a "free enterprise arsenal" which was chosen mainly for "political" (meaning ideological) reasons. This informant further described the "free enterprise arsenal" as a conscious decision to be "inefficient" (because of duplication of management, and other things) in order to achieve ideological ends.

Others, however, argue that the free enterprise arsenal exists because the government quite simply lacks the capability to operate a wholly self-contained acquisition system (cf. Grant, 1978). It has inadequate technical, managerial, and material resources to do it; and, anyway, it is too thoroughly bureaucratized and organizationally rigid

as a result. Furthermore, the extant system is thought to facilitate spin-off of military-sponsored technical development to civilian application better than a simple arsenal would. In any case, runs this argument, we are committed now to the free enterprise arsenal, and the costs of change are probably unacceptable.

However they choose sides on the arsenal issue, few observers lack awareness of the problems of the "contract state" and the balancing acts it requires. The problem of regulating relationships in the joint management environment of the free enterprise arsenal is a perpetually troubling one which demands constant attention. A large part of the problem here can be described as real and potential control loss by the government relative to the public interest. This, of course, is the essential basis of concern about such enduring cross-sector networks as the "military-industrial complex."

The careers of government contract officers and program managers depend heavily on the success of the programs with which they are associated. Fears arise, therefore, that as they stay with these programs, these officials may tend to become overly identified with them and seek to guarantee program success or at least lack of failure. In doing this they may become enmeshed with contractor organizations in ways that vitiate whatever formal or nominal power they may have as agents of the government. The movement of military officers into positions with defense contractors is, of course, a major reason for crediting these fears.

These "relationship problems" are of particular concern to those who favor an adversary relationship in government-industry contracting. The

classic marketplace where competition reigns supreme is their model; preserving and exploiting it where it exists, and simulating it where it doesn't is their goal. Management systems and regulatory measures which, on the one hand, increase the visibility of contractor operations, and, on the other hand, limit discretion in them are the devices for achieving the goal of market preservation and/or construction. Demands for information, absorption of uncertainty, and, careful policy direction of operations are correlates of these fundamentally political efforts. And they give rise to much wishful thinking about procurement strategies (e.g. TPP) and contractualist gambits (e.g. mechanical incentives) that hopefully will magically remove uncertainty from the acquisition environment, and, together with control agencies like DSARC and watchdogs of the "public interest" like the GAO, preserve the balance of power in the free enterprise arsenal.

There can be little doubt that tendencies toward power equalization are strong there. Each side has interests which overlap, albeit different ones, in different degree, at different times. Cross-sector coalitions emerge from these overlapping distributions of interests. Trade associations illustrate the phenomenon rather nicely.

Trade associations, such as the Aerospace Industries Association, National Security Industrial Association, and Electronics Industry Association, in addition to their nominal role as obvious representatives of industry interests, do other less obvious things as well. They serve as forums within which much indirect (as well as direct) communication can occur between government "buyers" and private "sellers." In the process, many of the basic terms and conditions of their contractual and general institutional relations are "negotiated."

Trade associations, like other combinations, serve more immediate power equalization functions by confronting government agencies with potent coalitions of industrial firms. Coalition-making, however, is not limited to this. Cross-sector coalitions may form as between particular industry and government organizations to advance their overlapping interests vis-à-vis the Congress, the public, etc. The military departments have traditionally maintained close relationships with industrial trade associations.

Ironically, efforts to control the relationship between contractor and government via regulatory and visibility enhancing mechanisms have somewhat the effect of blurring any separation of the parties. Regulation is, in simple fact, inharmonious with the notion of independent agencies acting independently at arms-length coordinated strictly by the impersonal forces of the marketplace. Furthermore, as more determined efforts are made by government agencies to gain visibility (absorb uncertainty) in contractor operations--by getting more and better information from them--a "vicious circle" is established: contractors become motivated to become less candid and cooperative and more insistent upon contract formalization to protect their proprietary "rights" as private parties.

We have spoken of General Slay's ideas that relationships between contractors and their government customers should be structured in accord with "commercial practices," which I take to mean essentially market relations. In keeping with this notion, one may note in DOD a renewal of emphasis on arms-length dealings--fixed price contracting and competitive procurement. At the same time, however, one may note contradictory tendencies to speak in terms of a government-contractor acquisition

"community" having "mutual" problems; and we earlier noted contrary observations such as "fixed-price or no, we will never go back to arms-length relations."

The same essential ambivalence is evident in the conversations of individuals in the acquisition community. Heavy stress is placed there on contractor "responsiveness" and, simultaneously, concern is voiced over "relationship problems." Trust is viewed as important to the government-contractor relationship; but a question lingers about how close and informal--how trusting--this relationship can legitimately be. Cordial, but "business-like, arms-length" dealings are looked upon as magical remedies for the government-contractor relationship dilemma. Like the "golden rule" and other aphorisms they are vague and elusive nostrums, wishful thinking, in fact--but wishful thinking that has mightily influenced federal quests for contractual and other system management devices, like mechanical incentives, which would transform the problem from a social-managerial to a "merely" technical one and thereby make it "disappear."

The acquisition system, however, is escapably a joint one, a public-private collaboration. As one former Secretarial-level official put it, "a free enterprise system with practical limitations." Whether undertaken for ideological reasons or simply to exploit resources concentrated outside the public sector, the price of this difficult relationship is that it must be continuously managed.

Managing it can be difficult and there will naturally be failures, abuses even, of the implicit trust involved. Contracting officers commonly feel program-to-program relationships get too close. Contractor

responsiveness is sometimes excessive, with certain unhappy consequences. In a joint enterprise, it always is difficult to decide whose efforts have been decisive to its outcomes; and a vexing question may arise about how far it is appropriate to go in preserving a productive liaison. If it is "unhealthy for major contractors to lose heavily" does that mean that steps must be taken to ensure them against those risks? And if it does, how is it to be done? By guaranteeing profit on a contract-by-contract basis? By "bailing out" failed businesses after-the-fact? By government people working to support program operations, supplementing or improving deficient contractor behavior? Or what? Good questions. No simple answers.

In the award fee environment these questions and the issues from which they arise have a particular force. Too friendly or hostile a relationship between contractor and government can generate evaluation biases that may impair the validity of the award fee process (cf. Knopf, 1977). Where responsiveness is over-stressed, the contractor ceases to be an independent partner. In extreme instances, as sometimes in GOCO settings, contractor employees act more like, and perceive themselves more like, government employees with little loyalty to the contractor firm. In fact, of course, it is typically true in these contexts that a change of contractor means little more than replacement of a few managers and maybe a new overhead pool. In joint management environments there is the problem as well of evaluators being, in effect, co-workers, and, so to speak, of evaluating themselves, although most observers involved with the process discount the importance of these problems. And, too, in a collaboration, grade inflation may result

from government project personnel not wishing to "make the contractor mad." By the same token, a contractor may find it hard to complain about an evaluation or fee award and, at the same time, avoid seeming to take an adversary posture.

But these, like issues of contractor "personality" or individual management styles, are general problems of management. They take on special qualities and new dimensions in joint public-private enterprise and are plainer in award fee environments, not because they are peculiar to the award fee, but because the method encourages (compels ?) confrontation of management issues on a continuous basis.

Managerialist Thinking in The DOD. Not uniformly, to be sure, but the flavor of much control- and discipline-related thinking in the Pentagon today seems at least broadly consistent with this thesis. It explicitly acknowledges the operation of "extracontractual motivations" and orients mainly toward noncontractual means of achieving acquisition goals (e.g. RIWs, program milestones, terminations, etc.). "Good contracts won't save poor programs," and "the only good contract is one that won't get in the way," are surprisingly widespread "managerialist" sentiments. They go hand-in-glove with new recognition of the crucial role of the program manager--of "hands on" management, instead of management by remote control--and the need for more discretion (yet more discipline ?) at program levels, as well as the idea that "acquisition strategy is a concept not a formula or a concrete plan."

There actually seems to be considerable sympathy in today's Air Force for an image of policy-making drastically different from traditional bureaucratic notions of top-down strategic planning. What might be

called a percolator model envisages policy/strategy as a resultant from representations and interpretations of activities at lower levels "percolating" upward. According to the percolator model, routine operational decision-making is critically important for all strategic and tactical aspects of acquisition planning and management because of the tendency of everyday decisions to constrain the future, one way or another. Once operational decisions are made and events set in train, a program becomes committed to courses of action that determine other decisions, irrespective of the preferences of high-level policy makers, who then can only fashion strategies in the abstract or as accommodations to circumstantial realities. Decentralization is one rather obvious managerial implication of the percolator model.

There is, of course, a chronic tension between centralizing (or bureaucratizing) and decentralizing (de-bureaucratizing) trends in large organizations. Accountability is hard to square with discretion, yet innovation and problem solving are hard to square with standardized routines and specified role charters. Ironically, at the same time that within itself the DOD seeks to diminish micromanagement from above, accountability aspirations stimulate it. PPBS and zero-base budgeting are not without bureaucratizing effects; and micromanagement from Congressional staffs and GAO are relatively new developments. At any rate, consideration of the conceptual frame of current DOD acquisition strategy clearly leads again to the importance of management at the level of program implementation.

Program Management and Capabilities For It in the DOD

Ironically perhaps, while sentiment in favor of decentralized program

management exists in DOD, there also is a lot of uncertainty there about the ability to manage of those who would do it. Skill deficiencies are aggravated by ephemeral managerial fads and swings of policy, and one may perceive many management systems as efforts to compensate for the real or imagined deficiencies of human managers. Program managers (PMs) in the Air Force are encouraged to develop detailed management plans, including, when relevant, award fee plans, as early as possible in the life of a program. Their drafts are reviewed at headquarters by experts, business strategy panels, and "murder boards," as well as by their commanders. In addition to providing higher-level control of lower-level operations, these procedures--regarding which images of "war games" may be invoked--try to "balance vested interests" in programs. But, they are also frankly seen as a discipline and a training ground for PMs.

In this context which stresses the importance of vigorous program management, but where uncertainty exists about capabilities for it, award fee methodology can be looked upon as a helpful discipline on program management. Good award fee administration is thus good program management and, presumably, vice versa.

Contractor Motivation. Of course, just what good award fee administration consists of is subject to specification. One universal impediment to this specification, however is inadequate understanding of contractor motivation. Most active participants in the acquisition community understand that contractor motivation "isn't all economics." And most of them now understand that contractor motivations are many. Some of them understand, too, that it is therefore difficult, if not impossible, to write motivational contracts--extracontractual influences are too many, too strong, and too

resistant to control (cf. Hunt, 1971a). Unfortunately, what few actors in the acquisition community seem to understand is that the award fee is not a form of motivational contract in the explicit sense of classical incentive contracts. The idea of award fee as a management tool interlinked with other techniques of program management is not yet well-rooted, despite relatively extensive use of the method.

The Question of Guidance on Award Fee Use

Problems of guidance for using the award fee in Air Force (and other) acquisitions is today less a problem of procedure than of concept. Organizations which are relative neophyte users of the award fee may find a "cookbook" like the 1978 DOE Guide useful; but the award fee doesn't lend itself to boiler plate clauses, and, anyway, in many agencies the award fee has settled in as a reasonably familiar technique for the use of which detailed procedural guidance is no longer needed. As one NASA official commented, for instance, "we have got along without [a new award fee guide] for seven or eight years, which probably indicates we don't really need one."

Furthermore, detailed procedural guidance probably is arguably undesirable on the ground that it tends to defeat the flexibility of the method. DOE policy, for example, is to hold rules and regulations on the award fee to a minimum in order to encourage experimentation, thus leaving procedural details to the "field." (DOE's new Guide may, however, standardize its procedures more than it anticipates or wishes.)

We have seen tendencies toward standardization of award fee procedure in the AFSC, particularly in SAMSO. To be sure, there is no clear evidence

that these tendencies have been counterproductive. Nevertheless, they warrant a skeptical eye. Diversity of award fee procedure is not, by definition, unhealthy. On the contrary it is more probably adaptive. To eliminate it simply for the sake of s.o.p. (as, apparently, at SAMTEC) is, I think, an error. And, it is an error which stems from a misunderstanding of the award fee concept. Hence, better education on the concepts and objectives of the award fee, in relation to federal acquisition policy and program management, is what the field needs, not some more how-to-do-it guidance (cf. also DeJong, 1978).

The DAR set certain constraints on the use of award fee contracts, but their number is rather small and their stringency not severe. In fact, the general tenor of the ASPR/DAR is to encourage imagination in using the award fee for system acquisition.

Air Force policies on the uses and purposes of the award fee seem both clearer and simpler at higher than at lower levels. High-level Air Force policy (cf. Hq. USAF/CAP, 16 March 1977) emphasizes the usefulness of award fee contracting whenever management is the "decisive factor in performance." Here the award fee is conceived in relatively uncomplicated terms which envisage evaluations more as devices for directing management attention to government concerns than as routines for compensating the contractor, although they are that, too, of course.

Whereas higher Air Force levels stress the general utility of award fee as a management tool, at lower levels it is more often viewed simply as a special-purpose contract type--in fact, a less-preferred substitute for "objective" incentives. This attitude is encouraged by the traditional although misguided practice of defining the award fee as a form

of incentive intermediate between CPFF and CPFF.

Unsatisfactory comprehension of the essential nature of award fee acquisition techniques, together with easy to understand reluctance at working levels to exercise risky judgments, probably accounts for the fact that few -- any genuinely adventuresome applications of the award fee are to be found in the Systems Command--if our sampling of them here has been a reliable guide.

Summary and Conclusions

This commentary has served to identify several issues deserving of either or both policy review and research. Briefly, they are these:

(1) Award fee evaluation and grading norms and practices in the AFSC are complicated, hard to understand, and excessively variable. They need to be simplified, clarified, and made to show somewhat more commonality, especially within program offices. Policy review of and guidance on these matters should consist not of prescriptions for detailed scoring systems, but of basic standards which every system, whatever its particulars, is expected to satisfy. These policy standards should encompass: a. selection of performance factors; b. criteria for assessment; c. methods of measurement; d. provisions for weighting performance factors (or advice against it) and e. guidance regarding the definition of minimum acceptable performance levels.

(2) Alternative methods of providing contractor input to award fee planning evaluation warrant careful policy review and probably empirical evaluation.

(3) The effects on award fee processes of different organization levels needs study to the end of providing better guidance on the subject that is consistent with aspirations for decentralized decision-making and also for policy-level program oversight.

(4) It rarely is possible for contractors to earn maximum award fee. All aspects of this issue need careful policy review. Consideration should be given to: a. relaxing prohibitions against carrying unearned fee forward to later evaluation periods; and b. employing a "satisficing" model for fee pay-out that would align pay-out with the utilities of performance change for the government.

(5) Policies on allocating portions of the award fee pool by period need review in order to encourage greater discretion and tailoring of allocation plans to the circumstances of particular acquisitions.

(6) There is considerable uncertainty both about award fee objectives and Air Force policy regarding them. These matters warrant policy review and programs to clarify Air Force policy regarding the award fee and its use.

(7) Guidance on award fee concepts is needed more than it is on procedures in order to encourage imaginative application of award fee managerial strategies to new acquisition problems. In fact, with some modest revision, the December 1977 "Guide to Award Fee" produced by Hq. AFSC/PMPS could continue to serve well as an orientation document.

Award fee contracting in the AFSC needs to remedy three major general defects and confront certain choices. The first defect is that AFSC award fee evaluation plans show clear signs of becoming egregiously overelaborate.

Simplicity rules of thumb are routinely violated by excessively large

numbers of evaluation factors and complex scoring methods, which even their users frequently cannot understand.

The second defect is related to the first one. It is this: award fee planning and administration in the AFSC both suffer from objectivist biases which have unfortunate consequences. First, and most obviously, they subvert the intended role of the award fee as a means of effecting subjective evaluations of contractor performance. Second, they risk damping the communication essential to constructive removal of equivocality from necessarily ambiguous work statements. And, third, they tend to decrease the ability of government managers to control the programs for which they are responsible.

In addition to governing complexity and objectification biases, AFSC award fee contracting suffers from a third major problem: bureaucratization. SAMTEC's standardized ARB is the clearest expression of this, but there are generalized tendencies in the same direction throughout the AFSC. The danger from standardization or bureaucratization is not the simple fact of it, but the ways it inhibits flexibility and discretion in environments (like R&D) where flexibility and discretion are essential to effective management.

Hence, the first choicepoint: there is need now to orient (or reorient) award fee contracting policy in the AFSC to the basic trinity: simplicity, subjectivity, and flexibility. Training probably would be the soundest way of doing this. Further development of award fee contracting manuals probably would be the poorest way of doing it. Most, if not all, procedural questions are likely to work themselves out in a framework of sophisticated award fee application. Hence, the training which is needed is not so much in the procedural details of the award fee,

which are familiar anyway, as it is in its basic concepts and strategic objectives, and especially its facilitative functions for program management in the "free enterprise arsenal." And so, a second choicepoint.

Most of the real problems of award fee practice come to rest at the program level, where in large measure they translate to management strategies and tactics. A capability for sophisticated program management is surely decisive for effective system acquisition. This, however, implies as a fundamental precondition cultivation of managerialist rather than contractualist acquisition strategies, an orientation to which the Air Force is not yet clearly committed.

Partly this is a matter of policy, with respect to which there are now in the Air Force internal disharmonies as well as inconstancies between policy and operational environments. Whether or not to accept a joint management model of system acquisition as valid in the United States and to follow its methodological implications--via award fee techniques and otherwise--is, then, a final most critical choicepoint.

V

CONTRACTOR RESPONSES TO AWARD FEE

Summary of Findings

Reported here are results of in-depth interviews with a small sample of AFSC contractor personnel on the effects of award fee methods of system acquisition. A total of 16 individuals (mainly program managers and staff) representing 9 ASD, ESD, and SAMSO programs were interviewed on topics described in the appendix to this chapter ("Questions for Contractors"). Interviews ranged in length from about one and one-half to about two and one-half hours, and were conducted as discussions of the "Questions for Contractors" rather than as standard survey interviews. On several occasions, two or three representatives of a contractor organization participated together in the discussions, which regularly included reviews of contractor-supplied documents relevant to the subjects of discussion.

All quotations in the following pages are without attribution, in keeping with agreements concluded in advance with each person interviewed. Most interviewees represented AFSC programs studied for other parts of this overall award fee review, but certain others were added in order to broaden the total scope of contractor experience with award fee contracting. The result is that the information provided below, while best considered tentative because of sample limitations, is derived from a group of contractor representatives who are well-experienced with award fee contracts in a variety of applications.

(1) What are the Effects of Award Fee on Organizational Structures and Staffing Patterns?

It would seem from responses to this question that the fundamental effect of the award fee on contractor organization and/or personnel is induction of a highly responsive attitude--responsive, that is, to direction

from the government program office. Some observers believe contractors are "oriented to being responsive in any case," but award fee provisions nonetheless appear to enhance it.

The fact of on-going award fee evaluation seems to be at least implicitly omnipresent in the routine relationship between a contractor and the Air Force SPO--"the Air Force folks are always telling you about the award fee and this or that plum you could get if you did more of this or that;" or, from another contractor with a different emphasis, "we've had threats to the effect that if you don't do this it may have an effect on your award fee." As a result of such "atmospherics" contractors generally "put heavy stress on being responsive and avoiding arguments."

So strong are these dispositions, in fact, that more than one contractor has had to restrain responsiveness in order to remain "within scope," or avoid being cast as a simple "yes-man," which, it is feared, would expose them to the risk of losing the "respect" of their government counterparts. Restraining responsiveness usually entails an increase in centralization of the contractor program office and efforts to reduce the informality of working-level interfaces with the government program office.

The premium placed by contractors on maintenance of a responsive, careful attitude affects the way they staff themselves. Emphasis is placed on interpersonal skills. Ability to get along with the government program manager is apparently a major consideration in recruitment and retention of contractor program managers. The same considerations apply throughout the contractor organization, where submanagers are commonly briefed on the essentials of award fee plans, with emphasis on "the importance of the relationship and on responsiveness"--"we emphasize that there are lots of

customer people around, and, even though it is hard to do it, try to keep them happy."

Most contractor people deny any significant impact of award fee provisions on either the structures or operational properties of their program organizations. "We organize to do the job, not on the basis of a contract type" is a typical argument. Contractor program offices normally "orient (structurally) to the government's work breakdown" and "mirror" the form of the government program office," and they obviously make some modest adjustments to reflect organizationally the performance areas selected for emphasis by the government award fee plan.⁸²

Most contractors working under an award fee provision evidently do some planning in relation to it. Rare, however, is the contractor which goes so far as to develop its own full-fledged counterpart award fee plan against which to work. Equally rare, apparently, is the contractor which attempts anything resembling literal simulations of award fee evaluation in order to gauge program progress. Planning tends to the informal just as cross-program relationships tend to be personalized. Reactive rather than proactive seems to be the planning stance of most contractor organizations, which is not surprising in view of their basically responsive program life-styles.

With respect to the standing of their programs within their parent firms, contractor people are inclined to downplay any special effects of the

⁸² For example, a contractor working under an award fee plan which included "system effectiveness" as an evaluation factor, structured a "system effectiveness office" within its program organization.

award fee. After saying this, however, one program manager went on to admit that working under an award fee did attract a lot of "interest" from elsewhere in the corporation as to "how we're doing." He also allowed that he was subject to "frequent audits." He found it hard to say how much more often than normal these audits were, but he did believe they were more frequent because of the "tension" generated by the profitability of the program depending so much on an award fee.

Award fee evaluations also serve as "report cards" against which higher contractor management gauges both program and managerial performance--"comparisons are made between you and others (both inside and outside the firm), and it obviously affects your image."

At the same time, it appears that award fee provisions often give contractor program managers extra leverage with their own management and increased ability to command corporate resources. "We're a profit making organization," one PM pointed out, "and if I have trouble getting performance from line organizations I can use the award fee as a club."

Provisions for passing the award fee through the contractor organization are highly variable. Mostly, however, they seem either not to exist at all or else to be inexplicit relative to award fee. Some firms give parties and nominal awards to selected high performing individuals, but literal monetary bonuses seem to be atypical, even for the PM. Corporate policies commonly seem to limit bonus compensation to levels above the program. Personal incentive plans (e.g. MBO) often exist, but they reflect fairly general performance outcomes. Interestingly though, in firms where employee performance evaluation is relatively subjective, recognition of "award fee experiences" may be more explicit, taking into account the

individual program manager's personal performance, the overall performance of the program, and the difficulty of the task. But, even so, the PM will get a bonus or not based on overall performance, not just the award fee.

With regard to award fee burden, two varieties were recognized: administrative and emotional. Most contractors consider the award fee to impose special administrative burdens. Mostly they speak of these burdens in terms of added paperwork which they think would be less without the award fee (but which, in any event, they also tend not to consider a major factor).

Quite different was a fairly widespread reaction to award fee as imposing emotional burdens in the form of "evaluation anxiety" and a sense of "overload" consequent upon having to find time for award fee administration at the expense of other duties. Evaluation anxiety seemed at times to reach the proportions of a kind of "award fee paranoia"-- a pervading sense of being continuously vulnerable to the passing whims of powerful others.

(2) What Information is Given Contractors on Government Award Fee Plans?

On the whole contractors seem to feel well-informed on the essentials of the award fee plans under which they work. Briefings, memoranda, opportunities to comment on proposed evaluation factors, and, especially, various informal means of communications apparently make most contractors comfortable with their understanding of award fee plans. They, of course, seek as much information as they can get and, hence, though they occasionally are surprised by the results of their ratings, they know pretty well on what those ratings are based.

Mostly, too, contractors know who will be evaluating them (if they are not told officially, they soon find out); and they know when evaluations are made, although not necessarily just when monitors make the task-level judgments that are input to the ARB evaluation process. The actual processes by which they are evaluated remain rather more mysterious to them, however. But none of these mysteries appear to be matters of real concern in the contractor community.

On the other hand, contractors do complain of evaluation "slippage." As one of them commented, "the time to do evaluations is short and the pressure of other responsibilities on the evaluators is heavy." As a result, evaluations sometimes are not done in a timely way by the SPO, where it "may not be the first thing in their minds." Obviously, if evaluative slip schedule, so may fee determinations.

(3) Do Contractors Contribute Input to Award Fee Evaluations?

In most cases contractors, if they wish, are able to make some form of self-evaluative input to ARB/FDO deliberations. The form and degree of detail of this input is variable, as is the confidence with which contractors believe the Air Force wants it or takes it seriously. Many contractors report having been actively discouraged from offering formal assessments, whether via hard-copy or briefings, although a few believe their Air Force program offices "like it" and they plan to continue doing it. Other contractors have shifted away from formal presentations to "informal input," sometimes exclusively at the engineer level; and many of those which continue formal reports (usually descriptions of "strong points deserving award fee recognition" or a simple "compendium of incidents and accomplishments") do it largely on the off-chance that it might be influential and because "you have to do something."

(4) What Feedback is Given Contractors on their Award Fee Evaluations?

Feedback to contractors on Air Force evaluations of their performance is extensive and goes well beyond a simple letter from the FDO advising of fee award. Some contractors report receiving essentially the same briefing from the SPO as did the ARB/FDO; and, in any case, a "complete rundown" of award fee evaluations is evidently normal.

In addition to period-end feedback, contractors ordinarily receive interim evaluations which identify and review weaknesses needful of remedy, and which sometimes require explicit responses from them on their plans for improvement. By and large contractors report a "good dialogue" between theirs and the Air Force program office. As a result feedback to them on performance is essentially continuous although mainly informal.

(5) Do Contractors Understand the Award Fee Process?

Save for some uncertainties inherent in the award fee process, contractors as a rule appear to feel they understand its basic goals and procedures. They are, of course, often unclear about specific program objectives, but the award fee method itself seems to hold no major mysteries for them (they work hard at assuring that it won't).

Although comprehending of award fee methodology, contractors are uncomfortable with its subjectivity, which they sometimes feel leaves their fate depending on "how the evaluator feels that day." Yet, they seem to be "reasonably satisfied with the outcomes" of these subjective critiques.

(6) How Does Award Fee Affect Organizational Processes?

Nearly all contractors report high rates of formal and informal communication within their own organizations and with the Air Force program

office. They are not persuaded, however, that these high rates have much to do with the award fee, per se. Instead, they tend to feel the very nature of the work normally contracted under award fee provisions "in itself requires close liaison with the customer." Nevertheless, they agree that their generally "responsive posture" tends to guarantee interchange, albeit that they also sometimes fear that "the award fee impedes communication because people are disposed to hold back unpleasantness."

The report card feature of award fee evaluations seems to act as an important attention directing mechanism. Apparently both program and corporate managers are alert to it--"it causes management to be much more attuned to 'image' issues, and it sharpens your sensors." People in contractor program offices regularly report having the award fee evaluation factors continuously "in the back of their minds where they steadily influence what they pay attention to."

The evaluation anxiety which is a common by-product of this continuous awareness carries a risk of inducing over-responsiveness, which, however, may be more a management than an award fee failure--"the trick is to attend to the evaluation criteria [but at the same time] make sure not to bend things all out of shape because of the award fee."

Program decision-making thus "tends to center around considerations associated with the award fee evaluation and evaluation factors; in particular, decisions tend to be evaluated for their quality in supplying corrective actions for deficiencies identified in our own self-evaluations or by the government." In addition to making decisions with a careful eye on their impact on the award fee, contractors often report "spending a lot of time pre-conditioning the customer about decisions that are coming

so they won't come as a surprise and be unhappily received."

Award fee uncertainties present some problems for contractor financial planning. Nevertheless, most contractors reported somehow trying to incorporate award fee prospects into their financial plans. Some did not, however, preferring instead to regard the award fee as "gravy" or, if it was received, as being in the nature of a "windfall." The formality with which contractors made efforts to estimate award fee earnings and incorporate them into financial plans seemed quite variable. Sometimes it was part of a personal (MBO, or similar) plan for the PM; sometimes it was part of a more comprehensive corporate-level financial plan; sometimes it wasn't clear what it was.

Some administrative problems appear to exist for planning-oriented firms. Uncertainty of the award fee, especially when base fee is relatively low and award fee a large proportion of the total, apparently encourages contractors to "let the award fee float." As one PM said, "we don't integrate it into our financial plan. If we get it, that's great; if not, it doesn't make any difference to the plan. It's 'pure' profit." When projections are integrated into a plan, they seemingly tend to be subjective "guesstimates" heavily dependent on past experience with both the award fee and the particular customer.

(7) What Are the Effects of Award Fee on Program Outcomes?

There are several contractor viewpoints on this subject. They range from beliefs that award fee provisions have little effect on their programs to the opposite. One set of respondents took the position that they saw "no particular effect of the award fee on program quality." "It doesn't help the program manager," they claimed, "because he can't affect the

subjective vote of the government program office." These people also complained that the award fee "prevents you from planning ahead because knowledge of the award fee evaluation always hangs over your head and inhibits innovation, discretion, and what have you." Somewhat in the same vein, another contractor speculated that the ceilings on burden rates his firm had set in their proposal probably had a greater effect on the "end result" than any award fee.

Another contractor view runs to the effect that the award fee "doesn't do all that much" because award fee programs usually constitute only a small portion of total company sales. Consequently, they can't "shake up the company." Unless the program is very large and the amount of profit big, "it just won't capture any greater corporate attention" whether it is under award fee or something else. So at least from that perspective, the award fee neither helps nor hurts a program.

Quite different are the views of other contractor PMs who are personally enthusiastic about the award fee. One of them who "really likes the award fee" maintains that "we're truly incentivized--it keeps us healthy, keeps us going." Another felt it enhanced communication and helped foster a kind of galvanizing "mission identification" within his program. (Of course, he also made use of tie-tacks, stickers on ID badges, posters, and other devices to foster this mission identification, together with a heavy "people-oriented" emphasis on "informal hands-on" management.)

Many contractors haven't made up their minds about the award fee, however, or qualify their judgments on it. One of them, for example, "guessed" that "all-in-all the award fee had helped [his] program" by encouraging strivings for quality work. People become more oriented to their potential individual effects on the award fee, he thought. Still,

this PM wasn't sure if this had any true impact on program outcomes, or would be any different under fixed price contracts. However this may be, the consensus view of award fee impact among contractor PMs seemed to be that it "certainly does force responsiveness, if that is what the customer wants."

(8) Is Award Fee Used in Subcontracting?

Subcontractors sharing in a prime's award fee is not unknown; but neither is it frequent. The use of award fee in subcontracting is rare and, from all reports, probably doesn't exist when the matter is wholly discretionary with the prime contractor.

One contractor which reported having considered using award fee for subcontractors hasn't done so because "we have been afraid of it--our sub needs to appear independent." (In this case the subcontractor functions essentially as a third-party evaluator.) Another contractor, which has never used award fee for subcontracting, did report once trying an incentive on a subcontract. But the "whole thing was such a mess" they say they are not now disposed to use techniques other than fixed price for subcontracts. This probably is the predominant sentiment on the subject.

(9) What Are Some Strengths and Weaknesses of Award Fee Methods of Acquisition?

The primary weakness of the award fee from a contractor standpoint seems to be the perceived "vulnerability" of the contractor under it. "It takes an astute, level-headed government program manager to keep from killing the contractor," said one PM. And another, in the same vein, stated that "one problem is that it is arbitrary--monitors can kill you on some insignificant thing." Still, as noted, most contractor informants

judged the system as fair in practice. In this they appreciate "modulation from higher up" (than monitors, that is), saying that "fortunately there have been enough high-level checks and balances" to control personal biases and other possible abuses.⁸³

Apart from this general matter of vulnerability, some specific issues also seem to trouble contractors. One is the problem of "evaluation redundancies" that arises when numerous evaluation factors are used. "We get knocked in the head multiple times for the same thing." For example, a problem with performance may lead to a problem with schedule which leads to a problem with cost, and the contractor gets "dinged" in all areas. This obviously is a problem both of the number of factors and of their lack of independence.

Many contractors would like to see the award fee plan a subject of negotiation. That way, they believe, the government would have some feel for what "we think is important," and the parameters of the program could become clearer. As it is now, "we can't know what in particular they're after and can only guess."

Turnover of personnel in government program offices also is a major concern of contractors which has implications for the effectiveness of the award fee process. Lack of program management "continuity," they fear, results in impaired perception and memory of program processes and loss of the "total program perspective" that comes from continued involvement with it. This is especially problematic in the award fee environment,

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One contractor did express fears that award fee arrangements can induce efforts at ingratiation by contractors that "puts real temptation there" (meaning risks of bribery in one form or another).

they believe, because of the extent to which award fee depends for success on how it is administered and on "who the players are" and whether they trust and understand one another.

Comparing award fee with automatic predetermined incentives results in mixed reviews from contractors. One PM likes "tangible" cost or performance or even multiple incentives better than award fee because he "likes solid numbers they can use for planning and so forth," and besides, they are (presumably) free from possible personal biases. Another, however, prefers award fee, and would like it even more if it were possible to negotiate evaluation criteria, and it would be nicer still, he thought, if there was an appeal process. Yet another PM thinks incentives on cost are "great," but not on performance--"there has never been a successful performance incentive contract, they can't deal with change." Hence, "if you want the contractor to be an effective performer, award fee is the way to go; it is then just a matter of the objectives of the government being clear." And, if and when cost incentives are used, as they now often are, some contractor PMs apparently like an award fee so there is "some leverage for performance against cost which prevents financial-types from just stressing costs."

Speaking generally, contractor people tend toward a rather limited view of award fee application. Service contracting and R&D--the traditional fields of its use--are the ones they seem to see as appropriate. This appears to reflect their strong distaste for the relative ambiguity of award fee environments together with the discomfiting vulnerability they feel in it, and hence a preference to minimize the occasions for working under award fee arrangements.

(10) Does Award Fee "Motivate" Contractors?

The reaction to uncertainty just described seems to spill over to color contractor views about the motivational effects of award fee. Almost universally (there are exceptions) contractor informants described the award fee as, one way or another, a "potent motivator." Its motivational potency, however, apparently develops in, and possibly because of, the climate of uncertainty surrounding it. There is felt to be, for example, an agitating influence from the "subjectivity and potential for bias" surrounding the award fee; but there is more to it than that. The award fee clearly creates a "high tension environment," as one contractor PM characterized it, with uncertainty, pressure, and anxiety suffused throughout the program organization. After all, the program manager's own job is literally very much at stake in the responsiveness-oriented award fee environment where pay-offs are keyed to performance and "keeping the customer happy." One PM stated the matter succinctly when he commented that "the award fee is a strong motivator simply because it concentrates on management."

Attenuation of award fee motivation-induction may result from delays in fee award, however. Complaints were heard of simple administrative failures to fund the award fee pool as well as of non-timely evaluation/award. Complaints were also heard about depletion (for other purposes) of award fee dollars such that they were unavailable for disbursement. "The money nominally available under the contract should be kept in a sacrosanct account," one contractor proposed, "so that it is there to be awarded instead of already spent if the thing is to be credible." Suspicions, too, exist among contractors that, especially in CPAF arrangements (where costs are covered), the Air Force sometimes holds down fee

awards as a government program cost-saving stratagem. Consequently, "you end up just taking what they give you, which doesn't enhance award fee impact."

(11) How Do Contractors View Current DOD Acquisition Policy?

In our interviews contractor reactions to General Slay's well-advertised "initiatives" were nothing if not vigorous. Concentrating on Slay's wishes for more fixed price contracting, one contractor PM characterized DOD acquisition policy quite simply as: "everything is fixed price." Some baleful forecasts grew out of these perceptions. To wit: "General Slay will establish a great record of increasing FFP, FPI, etc. That will raise cost consciousness in industry, and in a couple of years we'll find a lot of contractors in trouble." Then, because the government "can't let the big guys go under," there will be bailouts or their equivalent. And so, "the more things change the more they stay the same--some people may get fired, but the companies will survive."

Meanwhile, runs this cynical scenario, as an "environment of survival" develops, and "corners are being cut," there will be hardware degradation. And why will this happen? Because "they're searching for more bang for the buck" in a context of curtailed budgets and "heavy funds shortfalls for maintaining force levels in balance with the Soviets;" so, motivated by "wishes" for cost control, "they're putting the screws to the contractors."

A more sober, if still negative, opinion on Slay's fixed price initiatives runs to the effect that they fail to take sufficient account of the magnitude of genuine program uncertainty and the difficulties it creates for fixed price contracting. Pessimism prevails among contractors on prospects for "simulating [or otherwise introducing] the disciplines of

the classical open marketplace in government acquisition." And efforts to do it, they complain, only worsens the already onerous growth in regulations, controls, and specifications to which they are subject-- "each RFP has something new in it."

Contractor personnel quite clearly believe that shared program management exists in the acquisition of major systems, not because of the award fee, but because of the "nature of the beast." Hence, they argue that mating award fee with fixed price strategies only "over-complicates things again," and moreover, fatally confounds programmatic motivations with the inherent tensions between fixed price and award fee ideology. Being "responsive" to award fee pressures can result in a contractor doing things "out of scope" or which are otherwise costly under the fixed price portion of a contract. The resulting erosion of profit potential under the contract results in both contractor unhappiness and resistance to being responsive.

As contractors see the nub of the problem it is this: "the Air Force wants fixed price, but [General Slay to the contrary notwithstanding] wants to do business as usual." A more realistic policy stance, one contractor suggested, would be one which recognized that "there may be an important place for larger award fee contracts (CPAF specifically) as a powerful tool for controlling the contractor directly, instead of trying to do it indirectly by establishing a fixed price environment by decree."

Life-cycle costing also came in for cynical commentary--"I have yet to see a contract given to the guy with lower life-cycle costs and high front-end costs." The consensus contractor view apparently is that "the

guy with the low price going in is going to win, whatever the government says about life-cycle costs and their importance." There is also a belief that once again the government is seeking incompatible goals in that design-to-cost concepts and emphases on competition tend to "cancel one another out."

Skepticism is prominent, too, about Slay's interest in fostering more orderly planning of the acquisition process. It is pointed out that delays in government actions and turnover of personnel both tend to defeat such planning, which already must cope with more than enough technical uncertainty. Delays make it hard for contractors to keep their technical teams together," and turnover contributes to substantial instability and immaturity in government program offices."⁸⁴

An important side-effect of government turnover is that in any multi-year military acquisition, the contractor tends to be the "constant element." As one of them noted, "we spend two years educating a guy and then he's gone." Thus, it is contractor people who brief and socialize new Air Force personnel, thereby heavily influencing their conceptions and perceptions of program objectives and circumstances.

Discussion

Despite contractor demurrers, the award fee seems an impactful technique. To the extent the present results are representative, it plainly induces a profoundly responsive contractor attitude together with organizational arrangements for its expression, and it summates with natural pressures in

⁸⁴ A perception, shared by Air Force personnel, is that "normal" problems of turnover-by-rotation-of-assignment now are being aggravated by retention problems in the military, especially at middle-management levels.

the same direction emanating from the nature of the work itself. Obviously the award fee environment can be a "high tension" place. Equally obviously contractor motivation can flag under such constant stress. To guard against that and sustain the salutary effects of award fee contract provisions, some "renewal" mechanism would perhaps be helpful, although it may simply be that we confront here a more or less "natural" state of existence in the supercharged but equivocal world of system acquisition.

By and large the findings of this study suggest quite strongly that the award fee works essentially as theory forecasts. Plainly, award fee arrangements work to augment the potential (and actual) influence of the government program office and especially its manager. It does this directly by encouraging contractor responsiveness to direction; and it does it indirectly by apparently enhancing the power of the contractor manager within his/her firm.

A possibility exists, of course, that the potency of an award fee contract depends on its being one of no more than a few such in a contractor's on-going mix of contracts. If all contracts were award fee, conceivably the impact of any one of them would be attenuated. A more important lesson from the foregoing, however, would seem to be a clear need to guarantee by selection, training, and policy support the ability of the government program manager to use wisely and effectively the latitude for program control given him by award fee structures.

Whether current Air Force policy works in this direction or not seems eminently debatable.

APPENDIX

Questions for Contractors

1. In the case of the _____ Program, could you describe any effects which resulted from the award fee feature in the contract.
 - a. For instance, did it affect the way you organized or staffed your program office?
 - b. Did it affect the nature of your relations with other parts of your company?
 - c. Did it affect the nature of your relations with the government program office?
 - d. ...with other government offices?
 - e. Were there any differences in the way your program office, or its components, operated?
 - f. Did you, for example, develop any award fee-oriented management methods--e.g. "gaming" of award fee evaluations, bonus systems, "intelligence" gathering?
 - g. Did you find award fee administration any more or less costly than other forms of contract?
2. What information were you given about the government's award fee plan?
 - a. Were you told on what performance "factors" you'd be evaluated on? In general, or in detail?
 - b. Were you told how you'd be evaluated?
 - c. Did you know who would be evaluating you?
 - d. Did you know when you would be evaluated?
3. Were you able to, and did you, offer self-evaluations or other information to the government's award fee review board or FDO?
(If so, in what form? And, did you believe this to be worth the effort?)
4. How much feedback on the award fee evaluation process did you receive? How? and how often?
5. How well did you believe you understood the objectives and procedures of the award fee plan and fee determination process?

6. It has been suggested that the award fee tends to have particular effects on certain specific organizational processes. In your experience have you perceived special effects on:
 - a. communication processes, especially between your and gov't. program offices and personnel?
 - b. management attention--the things you "notice," the people who notice them, and the setting of priorities for activities?
 - c. decision-making--how you made decisions, or who participated in them?
 - d. financial planning at program and at corporate levels (re award fee)?
7. All-in-all, do you believe the award fee helped or harmed the program?
8. Have you used award fee methods for subcontracting?
9. As you view it, what are the general strengths and weaknesses of award fee methods of acquisition?
 - a. How would you compare them with other "incentive" contracting methods?
 - b. Have you any particular views on when award fee should or shouldn't be used--e.g. R&D, control logistics effects, achieve socio-economic objectives?
10. As you know, incentive contracts (including award fee) are supposed to help motivate contractors. Do they? (How or why not?)
 - a. Are there alternative methods that would be more effective?
11. How would you characterize DoD acquisition policy at the present time? What are its main themes or emphases? (Especially re A-109 and Gen. Slay?)
 - a. What implications do you believe these policies have for acquisition procedures (e.g. contracting methods, etc.)?

VI

"IMPROVEMENTS IN AIR FORCE APPLICATION OF THE AWARD FEE"

Conclusions and Recommendations

In his 1966 study for the Navy Special Projects Office, Egan described contractor reaction to award fee as "mixed." It still is; and it probably will continue to be because of the ways it tends to establish an "administrative" relation between contractor and government that effectively enlarges the government's relative program management role. Meanwhile, in government, judgment on the functions and status of the award fee largely depend, in the end, on whether or not judges are prepared to endorse a joint management model of the acquisition process together with the complex of attitudes, concepts and assumptions it enfolds. For the judge who chooses not to accept this J-model, the award fee is stripped of any but a compensatory or gap-filling rationale and becomes merely a special-purpose contract-type (or provision) the utility of which is limited to situations where no amount of effort can bend performance conditions to minimal requirements for fixed price market-like procurement. Within a joint management perspective, however, award fee is a tool for program management--which is to say for planning and controlling work on more or less ill-defined undertakings by private contractors on behalf of public requirements. So viewed, the range of opportunities for award fee application to acquisition problems requiring active and continuing government management is unlimited, save perhaps by practical considerations of cost in relation to program significance.

In this study, we have found that award fee methods "work" as forecast by theory. They induce among affected contractors an attitude of responsiveness to government direction and they enhance the latitude within which government managers may influence the directions and outcomes of the programs

for which they are responsible. Award fee procedures, which Jenkins (1979) likens to informal management information systems, help discipline and organize actions within the government program office as well as its relations with contractors. In short, the award fee "works" chiefly via the government program office. It enhances the power of government managers vis-à-vis contractor organizations; and it does this directly at operational levels. One may therefore recommend increased use of award fee contracting at the same time that one argues, in the spirit of OMB Circulars A-109 and A-76, for greater emphasis upon local program management as a means of improving and controlling the acquisition process.

Comprehension of Award Fee Philosophy. Since the introduction of award fee contracting, observers have consistently attributed to deficient understanding of its purposes any failures of award fee contracts "to serve their intended purpose" (as Egan put it in his 1966 study). The problem here I suspect is really two-fold. First of all, award fee acquisition strategies tend to be held suspect in acquisition circles because they collide with traditional arms-length fixed-price ideologies regarding the "appropriate" form of government-contractor relations. They contribute nothing toward simulating a public-private marketplace, and they give scant comfort to seekers of orderly contractualist solutions to acquisition puzzles. Of course they aren't meant to do either of these things.

Secondly, award fee methodology tends to be unsatisfying (to some) because, unlike other contractualist devices, such as predetermined incentives, it does not promise to eliminate the need for, and the risks of active human program management. The award fee does not remove any basic problems of managing, except, of course, for the large one of contractualist barriers to government managers getting into the act, as it were, and managing. If award fee methods of acquisition are to be effectively used,

then better training of government personnel, both technical and procurement, is essential.⁸⁵

Imaginative application of award fee methods requires good appreciation of the essentials of award fee philosophy and strategy, and it also requires freedom from excessive procedural constraint. The award fee now has "settled in;" its operational essentials are familiar enough that no more detailed guidance is needed on "how-to-do-it." Furthermore, as Carter (1977) points out anyway "most of the initial [technical] problems that are quite prevalent when CPAF contracts are first employed are resolved as experience is developed, administrative procedures and practices are refined and as communications both within the government and between the government and contractors are improved."

By and large this has happened. General experience with award fee contracting is widespread. Besides, except as human action has sometimes made it so, award fee is not procedurally complicated. The guidance and training that is needed now is conceptual. Were it otherwise recommendations would not be needed today (as they are) to (1) simplify award fee plans and procedures; (2) maintain the subjective essence of award fee evaluation; and (3) retain the flexibility of award fee strategy. Development of a sophisticated understanding by government procurement and line managers of award fee philosophy and strategy in today's acquisition environment is long overdue.

Just how this acquisition environment is to be understood by government policy-makers needs better definition, however. I began this discussion by noting how the status of award fee contracting depended on one's choice

⁸⁵ In fact, a general review and evaluation of Air Force training for program managers may be appropriate to appraise their content and emphases in relation to the essential tasks these managers confront.

of conceptual models for the acquisition process. Much aggregate uncertainty exists today on the status of the award fee, in the AFSC at least, because of questions regarding its harmony with broader DOD acquisition policy. Clarification of this relationship is an obvious prerequisite to designing educational and other programs calculated to advance comprehension of award fee approaches to system acquisition, just as it is to improve the applied use of award fee techniques.

Award Fee Decision-making. Improvement in the usefulness of award fee contracting requires attention to another question, however, which is separate from the particular properties or merits of any given policy: viz. precisely how is acquisition policy expressed in acquisition practice? This is a question which obviously articulates with larger ones having to do with the bases and methods of decision-making in award fee planning and execution, which decisions, in turn, articulate with the spectrum of decision-making that defines the broad process of program management.

After one of the more useful studies of award fee contracting, Carter (1977) correctly observed that "little factual information exists providing an overall picture of the operation (my emphasis) of the award fee contracting system" (p. 54). I interpret "operation" to denote the actual decision processes that occur in planning and executing an award fee plan: and I would joint Carter in suggesting that analysis of those processes is much needed. Understanding the premises of decision-makers making operational decisions is critical to the evaluation and control of program-level implementation of policy-level strategy. Research might explore these subjects in both government and contractor organization; and it could include inquiry into methods by which program organizations seek to motivate performance. The fact is that, despite much talk about it, we know sur-

prisingly little about how either the government or contractors actually go about "motivating" performance in their program organizations.

A next-step for cumulative research, then, is detailed analysis in selected cases of the concrete decision processes involved in award fee planning and execution. This research should be undertaken with clear orientation to the ways operational award fee decision-making by contractors and government alike reflects interpretations of prevailing acquisition policies (if it does), and the ways it links such policy (and other strategic premises) to particular problems of program management. In other words, it is recommended that research shift from a focus on award fee, per se, to a focus on the award fee as a decision-making tool--a link between acquisition strategy (policy) on the one side, and operational (tactical) program management on the other.

By way now of summary, I have concluded from this study that award fee contracting "works" essentially as per the theory provided for it at the outset. I have, therefore recommended its increased use. To facilitate this, and to enhance its outcomes, I have offered several recommendations for research and policy. I have said that

- award fee evaluation and grading procedures ought to be reviewed and guidance for them improved;
- alternative methods of providing for contractor participation in award fee planning and evaluation should be considered;
- consideration needs to be given to clarifying the policy issues at stake in choices of different award fee organization levels;
- means of making it feasible for contractors to earn all the award fee should be sought, including the device of carrying unearned fee forward to later periods; and

-rules for allocating fee to periods and to levels of performance need to be evaluated.

I have also said that, in general, more care must be taken in the AFSC to ensure that award fee applications satisfy the three fundamental conditions of

-simplicity,
-subjectivity, and
-flexibility.

To these ends I have proposed

-more and better training for program personnel on the philosophy and objectives of award fee approaches to program management, and
-clarification of Air Force policy as it relates to use of award fee methodologies.⁸⁶

I have also proposed that research

-shift from focusing on the award fee as a contract type to a focus on it as a decision tool for management; and that this research might best
-concentrate on studies of the decision-making that links acquisition policy with application at program levels.

Certain of these recommendations have implications for the DAR.

For example:

⁸⁶ I have not recommended development of a new how-to-do-it award fee primer. Instead I have emphasized, on the one hand, development and dissemination of technical guidance on a set of narrower and, if you will, advanced topics of award fee practice; and, on the other hand, better training for practitioners on the philosophy and strategic reach of award fee methodology. For introductory purposes, I have suggested that modest revision and enlargement of the Hq. AFSC/PMPS "Guide to Award Fee" (Dec. 1977) would probably do nicely. I would favor including in this guide a careful prescriptive statement of standards to be satisfied by draft award fee plans; but I would urge leaving the details of these plans to the judgment of planners.

(1) the AFSC DAR Supplement 3-405.5(d)(2) might need to be re-worded in a fashion less discouraging of provisions for rolling-over unearned fee;

(2) similarly, section (c)(4) might be revised to provide discretion for contractor input to award fee planning;

(3) section (e)(5) could perhaps be modified to encourage tailoring award fee plans and, at the same time, enlarged to provide more guidance on standards for award fee grading systems;

(4) section (e)(8)(i) could include in its discussion of "Criteria" guidance on defining the threshold standard of acceptable performance; and

(5) the AFSC Supplement might be otherwise modified to reflect a heavier emphasis on award fee as a management tool.

This limited study necessarily suffered from certain infirmities which should be remedied in future research. For instance, (1) it did not include input from corporate levels of large contractor organizations; (2) it did not include small contractors in sufficient number to allow meaningful comparisons of the effects of award fee on firms of different size; and, possibly most important, (3) it did not include a sufficient number of contracts to allow comparisons of award fee effects across a full spectrum of applications (e.g. R&D vs. service contracting). Indications were found of certain possible problems associated with service contracting (development of "personal services empires") which may or may not be widespread and which may or may not be peculiar effects of the award fee.

Therefore, further research should be undertaken to:

(1) obtain better information on possible corporate-level adaptations to award fee by contractor organizations;

(2) compare award fee impacts on smaller and larger contractors;

(3) compare effects of the award fee in different applications, and, to the extent possible, with different contract forms for the same purposes (e.g. CPAF vs. CPFF for service contracting).

Also, it was noted several times in earlier parts of this report that the ability of an award fee contract to attract contractor attention and induce responsiveness may be inversely correlated with the number of such contracts being managed by the same contractor. Therefore, because this may be a critical consideration in implementing a recommendation for increased use of award fee contracting, research should be directed to evaluating specifically the effects on responsiveness of having multiple award fee contracts within a single contractor organization.

Finally, because the point is so important, I wish to end this report by again calling attention to the critical role of program management in the acquisition process. I have argued that the award fee works much as theory suggests; but it works via government program offices (or similar organizations). In fact, a case can be made that the most important feature of award fee methodology is that it promises to return to government people the program responsibility that had been transferred to contractors via the introduction of incentive contracting. Realization of this promise and the success of award fee as a tool depends on government program personnel being both willing and able to manage. Partly this is a matter of training, as I have said, and partly, it is a matter of better understanding the policy-procedure nexus of program management--how decisions are made and problems solved, and on what grounds--and, of course, how award fee affects it. The coupling of policy and procedure, specifically at program levels, is crucial to the fate of acquisition planning. It therefore needs careful study and analysis as a planning propaedeutic. To better understand this

coupling and the particular effects of award fee on it, then, careful comparative study of program management and policy implementation under award fee and other contractual provisions deserves high priority on the government's acquisition research and strategy agendas.

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Appendixes

Appendixes A-H which follow illustrate various expressions of concrete award fee administrative procedure more or less current with the U.S. Air Force Systems Command. They are displayed here in order to show examples of how award fee concepts have been translated into tangible practices. The examples should in no case be treated as models or assumed to be effective. They are unevaluated illustrations of practices.

- A. Sample Award Fee Plan, Outline and Face Sheet (SAMTEC 70-11)
- B. Illustrative Award Fee Scoring Elements
 - 1. Detailed 4-point 3-level structure
 - 2. Simpler 5-point 3-level structure
 - 3. Three-point 2-level structure
- C. Sample Award Fee Organization
- D. Sample Monitor Report Forms and Award Fee Inputs
- E. Sample Award Fee/Scoring Conversion System
- F. Sample Briefing Format, Award Review Board
- G. Sample Award Fee Evaluation Report Form (SAMTEC 70-11, Form 30-- after ASPR)
- H. Sample Program Milestones, Award Fee Periods, and Allocations
- I. An Award Fee Bibliography

Appendix A

Award Fee Plan--Outline and Face Sheet (SAMTEC 70-11)

SAMTEC 70-11

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Attachment 1

1 June 1979

SPACE AND MISSILE TEST CENTER
Vandenberg AFB, CA 93437

AWARD FEE PLAN
DATE*

CONTRACT TITLE*

Directive guidance for this award fee plan is contained in the Defense Acquisition Regulation, as supplemented by the Air Force, Air Force Systems Command, Space and Missile Systems Organization, and as implemented by SAMTEC Regulation 70-11.

1. CONTRACT NUMBER: *
2. CONTRACTOR NAME AND ADDRESS: *
3. CONTRACT DESCRIPTION: *
4. AWARD REVIEW BOARD MEMBERSHIP: IAW SAMTECR 70-11, Para 2b.
5. INTERIM EVALUATIONS: IAW SAMTECR 70-11, Para 4e.
6. ARB EVALUATION PROCEDURES: IAW SAMTECR 70-11, Para 4c.
7. EVALUATION DATA: IAW SAMTECR 70-11, Para 4a.
8. AREAS OF EMPHASIS: The Fee Determining Official will notify the Contractor by letter, of the areas of emphasis, prior to each evaluation period.
9. EVALUATION AREAS AND CATEGORIES: Delineated in attached Performance Evaluation Matrices.
10. EVALUATION PERIODS/MILESTONES: *
11. AWARD FEE ALLOCATION BY PERIODS/MILESTONES: *

*To be completed by Contracting Officer in conjunction with the cognizant SAMTEC office.

NAME AND GRADE OF FEE DETERMINING OFFICIAL
Fee Determining Official

2 Atch

1. Performance Evaluation Matrix
(Technical Performance)
2. Performance Evaluation Matrix
(Management and Cost Control)

Appendix B

Illustrative Award Fee Scoring Elements

- B.1. Three-level structure (four-point)
- B.2. Three-level structure (five-point)
- B.3. Two-level structure (three-point)

Appendix B.1

A Detailed Four-point Three-level

Award Fee Scoring Structure

PERFORMANCE MEASUREMENT CRITERIA

A. TECHNICAL PERFORMANCE

AVERAGE

Performs tasks associated with Work Breakdown Structure (WBS) 4500 and 1300 (see following note). Tasks are completed within reasonable schedule and cost constraints and are technically adequate.

Note: Tasks performed under WBS 4601J and 4601S are evaluated under criteria A2 and are identified elsewhere.

Meets the "average" performance criterion. Adequately maintains and updates capabilities, including computer models previously developed. Promotes communication and coordination within contractual tasks and with other contractors/agencies. Responds in a positive manner to Government technical direction. Periodically reassesses the status of analytical tools and integration capabilities and implements improvements or cost reduction measures.

VERY GOOD

Meets "good" performance criterion. Takes initiative to promote and maintain a highly effective level of coordination with other contractors/agencies. Identifies and works to resolve coordination problems with other contractors. Obtains data from agencies and other contractors without excessive reliance on the Air Force program office for support. Provides effective conceptual phase integration planning support to new spacecraft programs. Tailors training element plans, capabilities, and tools based on recurring element feedback. Promotes innovative approaches to define and recommend Payload Integration Equipment concepts.

EXCELLENT

Meets the "very good" performance criterion. Demonstrates initiative to actively resolve coordination and task definition problems with the Spacecraft Integration Contractor (SINC). Conceptual phase support to new spacecraft demonstrates high quality and responsive products. Demonstrates effectiveness in applying real-time feedback from the recurring effort to the analytical tools and Payload Integration Equipment (PIE) areas. Responds quickly to program changes regarding PIE design concepts. Works closely with the program office to determine the most cost effective way of obtaining PIE consistent with the program objectives. Maintains highly effective levels of coordination within Program Tasks and between the Program Tasks and other related contract activity. Accomplishes all tasks within schedule constraints.

PERFORMANCE MEASUREMENT CRITERIA

A. TECHNICAL PERFORMANCE

	<u>AVERAGE</u>	<u>GOOD</u>	<u>VERY GOOD</u>	<u>EXCELLENT</u>
A2. Ground and Flight Operations Tasks (Sustaining Element)	Performs all assigned tasks. Tasks completed within reasonable schedule and cost constraints, and are technically adequate.	Meets the "average" performance criterion. Defines accurate launch site support plans and requirements. Defines accurate plans and procedures for implementation of the DOD STS flight operations system. Develops and maintains a current operations data base. Responsive to Air Force program office direction.	Meets the "good" performance criterion. Active support to launch site acquisition plans and utilization studies. High quality documentation products. Develops timely and high quality plans and procedures for flight planning, flight readiness and flight control elements. Identifies operations problem areas and coordinates with appropriate agencies and contractors to effect timely resolution. Develops effective working relationships with other contractors and Government agencies.	Meets the "very good" performance criterion. Highly effective in identifying and maintaining DOD payload ground requirements. Highly effective in identifying ground facility and support service incompatibilities with payload requirements. Develops high quality plans and procedures for implementation of the DOD STS flight operations system. Recommends viable alternate solutions to operations problem areas that reflect maximum coordination with affected agencies and contractors. Highly effective in refining flight operations support systems and procedures to reflect payload user requirements. Maintains effective working relationships with interfacing operations contractors and Government agencies.

PERFORMANCE MEASUREMENT CRITERIA

A. TECHNICAL PERFORMANCE

AVERAGE	GOOD	VERY GOOD	EXCELLENT
A) Software Verification and Validation	Performs all assigned tasks. Tasks completed within reasonable schedule and cost constraints are technically adequate.	Meets "average" performance criterion. Provides high quality documentation of own efforts and taken initiative in providing Air Force with visibility into subcontractor efforts, including providing direct copies of subcontractor documentation. Continually assesses the verification and validation tasks and suggests improved methods for accomplishing the job.	Meets "good" performance criterion. Establishes and maintains a highly effective working interface with the software development contractors. Resolves interface problems without Air Force intervention. Anticipates problems in software development contractors and can tasks and suggests remedies, including cost and schedule impacts of alternatives.

PERFORMANCE MEASUREMENT CRITERIA

A. TECHNICAL PERFORMANCE

AVERAGE

Meets the "average" performance criterion. Performs all assigned tasks. Task completed with: consistent schedule and cost control, and is technically adequate.

GOOD

Meets the "good" performance criterion. Performs adequate maintenance of information system. Supports program office planning and execution. Periodically reviews information system and its associated components. Coordinates with other agencies to identify changes.

VERY GOOD

Meets the "very good" performance criterion. Takes the initiative to accomplish coordination and to resolve coordination problems. Implements a highly effective data exchange program. Utilizes resources in an optimum and effective manner. Provides recurring element program visibility to the Government.

EXCELLENT

Meets the "very good" performance criterion. Highly effective in developing and maintaining cooperative working relationships between all interacting contractors. Consistently reflects high quality and excellent input of the best recurring element contractual phases and of high quality. Highly effective in supporting the control definition process for follow-on recurring element activity. Integration project engineers maintain highly effective project engineering control into supporting activities within the contractor organization.

B7. Risk Management

AVERAGE

Contractor establishes and maintains an on-going risk assessment and management effort. Provides the Government with risk visibility.

GOOD

Contractor statuses risk items at management reviews. Identifies risk resolution alternatives and defines preferred solutions.

VERY GOOD

Develops and maintains a highly visible program to status resolution of identified significant risks. Provides effective risk assessment as part of software verification and validation effort. Proposes reasonable solutions to identified software risks.

EXCELLENCE

Maximizes identification and Government visibility of contract risks. Identifies, assesses and recommends solutions to program risks. Works with NASA, SAMSQ and other contractors to resolve identified program risks. Initiates risk resolution prior to program impact occurring.

B8. Personnel

Man-loading generally reflects initial levels established and budgeted at start of contract.

Reviews on man-loading and identifies non-loading requirements to meet long-range contract requirements. Some inefficiencies occur due to inability to reallocate personnel on a near-term basis.

Personnel highly capable to undertake varied assignments. Provides Program Office with visibility into warning problems and solutions, and other warning actions.

Techniques and methods are established and implemented to ensure efficiency in utilization of resources. Highly effective in retaining key personnel while keeping those productively employed. Demonstrated effective use in maximizing utilization of personnel. Provides visibility to Government on qualifications of newly assigned key personnel.

३३

DIFFERENTIAL

Maintain cost and activity performance within required limits. C/SCSC constrains Anticipated cost and activity performance problems and implements or recommends corrective action. Identify and recommends corrective improvements to the contract cost accounting system. Establishes only minimum essential cost accounts. Demonstrates aggressive management of cost accounts. Maintains accounting system stability through careful forward planning. Anticipates and provides advance notice of billing needs.

Appendix B.2

A Simplified Five-point Three-level

Award Fee Scoring Structure

CONTRACT

Performance Evaluation Matrix

Area	Categories	Sub-Marginal	Marginal (0-20)	Good (21-55)	Very Good (56-85)	Excellent (86-100)
A. Technical Performance	A-1 Thoroughness	Contract surveillance required to complete tasks. Assigns low priority to problem solution.	Requires occasional prodding to complete tasks. Needs government resolution of most problems.	Normal interest & desire to complete tasks with average assistance & direction.	Complete tasks free of incompatibilities with little or no direction.	Develops complete & accurate plans. Seeks out problem areas and resolves with associated action ahead of schedule.
	A-2 Perceptiveness	Never plans ahead. Requires constant prodding from government; Always puts low priority on problems.	Does not usually initiate corrective action unless prodded by government.	Occasionally needs prodding to resolve problems.	Needs very little direction, usually solves potential problems.	Always plans ahead seeking out problems before they become real problems.
	A-3 Accuracy	Brief on tasks; tending to leave questionable situations for government to resolve	Has followed government guidance on tasks.	Has followed guidance, questioning and resolving doubtful areas.	Work complete with notes & explanations for all anticipated questionable areas.	Work on high caliber incorporating all pertinent data required.

CONTRACT

Performance Evaluation Matrix

Area	Categories	Sub-Marginal	Marginal (0-20)	Good (21-55)	Very Good (56-85)	Excellent (86-100)
B.	B-1 Efficiency	Costs/Hours the budgets by more than 5% of more than 15% of tasks.	Costs overrun budgets by 14-15% of	1 hour cost over- runs are seldom a problem.	No cost/hour overruns.	No overruns. Some tasks are underrun, thus providing dollar for additional tasks.
	B-2 Responsiveness	Indifferent to direction. Ig- nores comments of agencies.	Sluggish in responding to direction with minimum positive action.	Mostly responds to direction with positive action within a reason- able period of time.	Almost always responds to dir- ection immedi- ately taking posi- tive steps to implement ASAP.	Always immed- iately respond to direction with extra- ordinary, quick decisive, posi- tive action.
	B-3 Ingenuity	Lacking good solutions in many areas. Excessive number of changes with serious cost/ schedule impact.	Barely adequate. Some difficulty in using solu- tions; many changes re- quired.	Adequate solutions. Uses some proven concepts with tol- erance impact in cost/schedule.	Very good solu- tions including much considera- tion for proven concepts. Few changes required.	Excellent solu- tions, highly operable, easi- ly accommodates al- ternative features.

Appendix B.3

A Simple Three-point Two-level
Award Fee Scoring Structure

ATTACHMENT III

REV 3

LAUNCH SUPPORT

I. Good

- Effective management control of field activities.
- Resolution of prelaunch checkout problems with minimal impact to launch schedule.
- Adequate definition of launch site requirements to support spacecraft processing.

II. Very Good

- All of I.
- Thorough spacecraft prelaunch checkout utilizing existing launch site capability.
- Maintain effective interface with launch site integrating contractor and associate contractors.

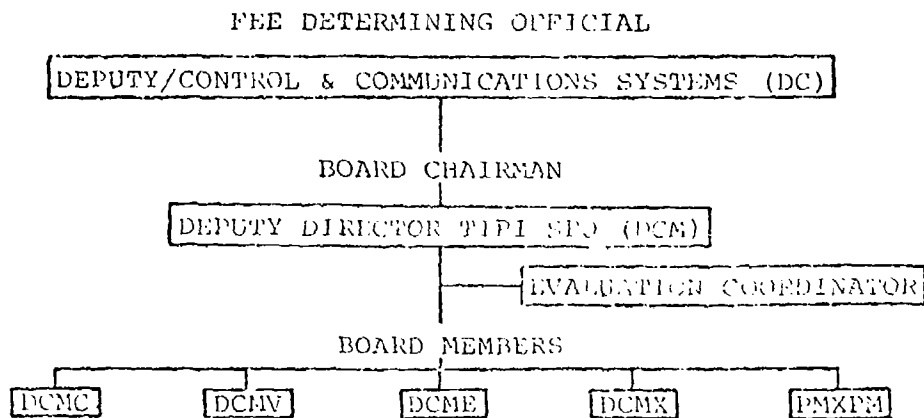
III. Excellent

- All of II.
- Prompt corrective action - including adequate retest - to resolve prelaunch test problems with no impact to launch schedule.
- Initiative in contingency planning to ensure launch success and preclude impacts to launch schedule.

Appendix C

A Sample Award Fee Organization

(ESD-TIPI)

ORGANIZATION:3. RESPONSIBILITIES:

a. Fee Determining Official:

- (1) Review ARB fee recommendation.
- (2) Determine Award Fee earned. See sample Determination and Findings, Attachment 3.

b. Chairman of ARB:

- (1) Insure that activity of ARB is properly documented.
- (2) Forward official records of ARB to FDO.
- (3) Forward FDO determination to PCO for contractual implementation.

c. Evaluation Coordinator:

- (1) Prepares and forwards evaluation sheets to OPRs for evaluation.
- (2) Receives, analyzes and computes evaluations received from OPRs.
- (3) Schedules ARB meetings.

- (4) Present evaluations and computations to ARB.
- (5) Serves as recorder for ARB.
- (6) Prepares documentation for ARB Chairman's presentation to FDO.
- (7) Retains files and documentation pertaining to all Award Fee matters.

d. Award Review Board:

- (1) Reviews evaluations and computations.
- (2) Recommends Award Fee.

e. Officer of Principal Responsibility

- (1) Continuously monitors contractors performance in tasks as assigned. (See Attachment #2)
- (2) Prepares numerical evaluation upon receipt of Evaluation Coordinators request.
- (3) Discusses potential improvement areas with PCO for later contractor debriefing.

f. Procuring Contracting Officer (PCO)

- (1) Maintains records that reflect proper Award Fee Baseline.
- (2) Prepares official contract modification file.
- (3) Authorizes payment of FDO determined fee.
- (4) At Contractor's request, conducts a debriefing which will enable contractor to improve performance during subsequent Award Fee periods.

Appendix D

Sample Monitor Report Forms and

Award Fee Inputs

Daily Report to Monitor

NAVSTAR



TEST OPERATIONS

14 May 79

CURRENT ACTIVITY:

UH-1H : Loading HD T-Pallet system for flight tests this week.

MV : ~~354/261 static testing scheduled.~~

MP : Checkout MIP - MP operation.

STATUS:

UH-1H : HD system was loaded this morning. Unable to checkout due to 400HZ lab power down at CDH.

MV : Testing was cancelled due to MCS hardware failure and no uploads.

MP : Conducted diagnostics and checkout the complete system. Isolated the checksum failure to an IDP I/O card.

PROBLEMS:

Weekly project mtg.

NO 17 78

DATE: 27 SEP 78

SUBMITTED BY: LQDR

STRADA

AREA FIELD TESTCOST

STRONG: * REDUCED DATA FOR MINI-RANGER
TEST AT YPG AT NO COST TO GOVT.

WEAK:SCHEDULE

STRONG: * * EXCELLENT SUPPORT FOR A
TIGHT SHIP TEST SCHEDULE.

PERFORMANCE

STRONG: * Extreme dedication in response to
data analysis and reporting requirements.

WEAK:

SAMTEC 70-11

Attachment 3

1 June 1979

EVALUATION MONITOR REPORT

1. PERIOD OF REPORT:
2. CONTRACT NUMBER:
3. CONTRACTOR:
4. AREA OF RESPONSIBILITY: Briefly describe the area(s) or categories contained in the award fee plan that the monitor is responsible for evaluating.
5. CONTRACTOR'S PERFORMANCE: (Be specific. Indicate where the contractor has performed well, and where improvement is required. Limit the evaluation to descriptions/examples which demonstrate the contractor's performance. Include the basis and frequency of evaluation, i.e.: contractor documentation, briefings, interviews, or other observations of the contractor's performance. Attach copies of supporting data to the report.)
6. (Evaluator's Name/Office Symbol/Telephone Number)

NAME AND GRADE OF EVALUATOR
Evaluation Monitor

Atch 3

Appendix E

Sample Award Fee/Scoring Conversion System

Table I

(1)	(2)	(3)
<u>RATING RANGE</u>	<u>NUMERICAL RATING (64 - 100)</u>	<u>PERCENTAGE OF POTENTIAL AWARD FEE (I.E., ALLOWED POINTS) EARNED</u>
Superior	100	100
	99	97
	98	95
	97	92
	96	90
Very Good	95	87
	94	85
	93	82
	92	80
	91	77
	90	75
	89	72
	88	70
	87	67
Good	86	65
	85	62
	84	60
	83	57
	82	55
	81	52
	80	50
	79	47
	78	45
	77	42
Fair	76	40
	75	37
	74	35
	73	32
	72	30
	71	27
	70	25
	69	22
	68	20
	67	17
Poor	66	15
	65	12
	64 or less	0

SECTION C: EVALUATION CRITERIA

1. The following are examples of the types of questions the OPR should keep in mind when evaluating the contractor's performance during a rating period. They are grouped under the three categories which make up the total performance evaluation and are to be considered as typical only, not all-inclusive.

a. COMPLETENESS

(1) Are problems properly stated and all parameters adequately defined?

(2) Are logical methods of approach and solution to problem areas followed showing what was done and why?

(3) Are adequate and comprehensive solutions to all aspects of the problems shown?

b. TECHNICAL QUALITY

(1) Does the approach and solution to given tasks represent a high degree of technical excellence?

(2) Are all hypotheses based on sound engineering judgment and experience and do they reflect technical excellence?

c. TECHNICAL MANAGEMENT

(1) Are tasks assigned on the basis of technical and experience background?

(2) Is prompt and complete advice provided concerning all discrepancies or problems encountered during the course of the contract?

(3) To what extent have task schedules been met?

(4) Is the amount of manpower expended by the contractor on the task(s) commensurate with the output?

2. The OPR may also use the following suggested guidelines in the course of evaluating the contractor's effort. These are grouped under the three categories which make up the total per-

formance evaluation, and again, are to be considered as typical only, and not all-inclusive.

a. COMPLETENESS

Rating Standard	Amount of rework by contractor after OPR/SPO review to produce satisfactory product/document
POOR	20% or More
FAIR	15% - 19%
GOOD	10% - 14%
VERY GOOD	5% - 9%
SUPERIOR	0% - 4%

b. TECHNICAL QUALITY

Rating Standard	Quality of Product/Document
POOR	Unacceptable
FAIR	Acceptable With Rework
GOOD	Acceptable Degree of Technical Adequacy
VERY GOOD	High Degree of Technical Excellence
SUPERIOR	Consistently Excellent

c. TECHNICAL MANAGEMENT

Rating Standard	Percentages of assigned tasks reflecting proper management in the utilization and assignment of adequate and proper personnel.
POOR	70% or less
FAIR	71% - 80%
GOOD	81% - 90%
VERY GOOD	91% - 95%
SUPERIOR	96% - 100%

Appendix F

Sample Briefing Format,

Award Review Board

BRIEFING FORMAT FOR ARB

1. Address, as a minimum, the following items in sequence:

- a. Agenda
- b. ARB Briefers and their respective areas of expertise
- c. Contract Budget Expenditure Plan
- d. Award Fee paid to date, for example:

MILESTONE	FEE AVAILABLE	FEE AWARDED	%
1. PDR COMPLETE	\$ 599,522.00	\$322,244.00	53.9
2. CDR COMPLETE	605,701.00	363,375.00	60
3. DTE COMPLETE	442,742.00	*	*
TOTAL	\$1,645,965.00	*	

- e. Award Fee Available this period.
 - f. Weightings for use on Contractor Performance Evaluation Reports:
 - (1) Category (Block 4)
 - (2) Area (Block 6)
 - g. Contractor's performance, by category.
2. All viewgraphs will contain the following information in the upper left-hand corner:
- a. Contract: _____
 - b. Contract Number: _____
 - c. Contractor: _____
 - d. Evaluation Period: _____

Appendix G

Sample Award Fee Evaluation Report Form

(SAMTEC 70-11, Form 30---after ASPR)

SAMTEC 70-11

Attachment 4

1 Jun 1979

CONTRACTOR PERFORMANCE EVALUATION REPORT						
Period #		through				
Contractor						
Contract Number						
Evaluation Monitors						
Signature/Date		3. RATING	4. WEIGHT	EVALUATION 5. RATING	AREA 6. WEIGHT	EFFICIENCY 7. RATING
1 AREA	2 - CATEGORIES					
		X				
		X				
		X				
		X				
			1.00		X	
		X				
		X				
		X				
		X				
			1.00		X	
		X				
		X				
		X				
		X				
			1.00		X	
				TOTAL WEIGHTED RATING:		
				1.00		

Note: Attach supporting data
SAMTEC Form 30

Appendix H

Sample of Program Milestones, Award Fee
Periods and Fee Allocation

FOR OFFICIAL USE ONLY



AWARD MILESTONES
AWARD FEE PERIODS AND ALLOCATIONS

FY 77				FY 78				FY 79				FY 80											
CY 76				CY 77				CY 78				CY 79				CY 80							
J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
ATP				FOR				CDR				PCA				FTV-1 FLT				FTV-2 FLT			
AWARD PER PERIOD I				AWARD PER PERIOD II				AWARD PER PERIOD III				AWARD PER PERIOD IV											
90K				270K				540K				900K											

TOTAL AWARD FEE ATTAINABLE: \$1,800,000

FOR OFFICIAL USE ONLY

Appendix I

Award Fee Contracting:

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